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ASSAULT: CHARACTERISTICS OF INJURIES AND INJURED

by

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DECLARATION

I certify that, except where acknowledged, the contents of this dissertation are based solely upon my own independent work, and have not been submitted in part or in full for the award of a degree to this, or any other university or examining board.

Signed .....

J.P. Shepherd

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ABSTRACT

Consecutive adult victims of assault who attended a large inner city Accident and Emergency Department over a one-year period (1985-1986) were surveyed and examined. Compared with the hospital catchment population, the young, the single, divorced or separated, the unemployed and males, were over-represented; whereas the elderly, married persons, those in employment, and women, were under-represented. A link between material and social deprivation and victimisation was strongest in the most deprived electoral wards. Almost half of all victims had been assaulted previously. Most assaults took place between 11.00pm and 2.00am on Fridays and Saturdays, in the street, public houses, discotheques, and private homes. Assault was commonly part of robbery or 'mugging', often followed arguments or intervention in existing altercations, and was often claimed to be unprovoked. Half of the victims reported more than one assailant. Assailants tended to be known to female victims, but unknown to male victims. Two-thirds of victims had been drinking immediately before the assault, and alcohol intake corresponded with that of drinkers in areas of high risk for alcohol-related illness. Abstinence was associated with less severe injury.

Most victims were struck more than once, with fists, feet, or a blunt weapon, and fell to the ground, where one third were struck again. Drinking glasses were used twice as often as all other sharp weapons, and only two victims were injured by firearms. Female victims were less likely than males to be assaulted with sharp weapons. Only one quarter of victims were recorded by the police.

The face was the most common site of injury, particularly fractures. Overall, the type of injury corresponded with the weapon used, though many lacerations were caused by blunt weapons. Female victims had proportionately fewer facial wounds than males, and fewer lacerations. Mandibular fractures were the commonest skeletal injuries, followed by nasal, zygomatic and upper limb fractures. Punching and kicking were more likely to give rise to fractures than blunt weapons. Almost one fifth of victims were admitted to hospital.

In a study of the psychological and psychiatric sequelae of maxillofacial trauma, assault victims demonstrated higher levels of anxiety, depression and psychiatric abnormalities than victims of falls or road accidents, particularly in the longer term. The social effects of assault were also investigated. Accounts of the assaults were characterised by initial helplessness and bewilderment. Many victims experienced symptoms of loss of self-esteem, though this was less marked in victims who had previously been assaulted. A typical 'mourning' process followed many assaults, the duration of which was linked with levels of emotional support from partners and families, and rapidity of physical recovery.

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CHAPTER 1

INTRODUCTION

1.1 Aetiology of Maxillofacial Fractures

Oral and maxillofacial surgery emerged as a separate surgical speciality primarily as a result of the need for dental specialists to treat patients with jaw fractures. This aspect of traumatology remains a major aspect of the speciality, and has developed and expanded to include management not just of fractures of the tooth-bearing parts of maxilla and mandible, but of fractures involving the zygomatic and naso-ethmoidal complexes, frontal bone and temporo-mandibular joints [Rowe and Williams, 1986]. Both World Wars have given rise to large numbers of casualties with maxillo-facial injuries, but, particularly following the Second World War, incidence of such injuries increased, largely due to increased use of motor vehicles. As a result of this, oral and maxillofacial surgeons have been conscious of, and particularly well-placed to observe, the changing aetiology of injury, although there have been few studies relating to overall pattern of injuries (i.e. including all other orthopaedic injuries). Causes other than war and traffic accidents include assault (inter-personal violence), falls, industrial accidents, sports, and advanced pathology of the jaws.

1.1.1 Assault

There is evidence that assault is now the most common cause of maxillofacial injuries among adults, in most Western industrialised countries, including Sweden [Lundin, 1973]; the Netherlands, West Germany, Easy Germany and Norway [Van Hoof, 1977], Finland [Lamberg,

1978], the USA [Neal et al, 1978], Czechoslovakia [Piechocki, 1973], as well as Britain [Haidar, 1978; Hill et al, 1984]. In these studies, incidence of maxillofacial fractures varied from 30% of all patients with these injuries(Bradford, UK - Hill et al, 1984) to 54% of patients (Norway - Van Hoof, 1977). In developing countries, incidence of maxillofacial fractures secondary to assault is relatively low (e.g. Libya - Khalid et al, 1981; India - Kapoor et al, 1983). Though physical child abuse has received a great deal of attention recently, aetiological factors appear to be different in children, falls accounting for most injury [Carroll et al, 1987].

Most studies have simply reported the incidence, site(s) of injury and demographic details, and have not attempted to relate changes to social factors or any other cause of violent behaviour. They have also tended not to include details of other orthopaedic or soft-tissue injuries which might help to clarify any differences between various groups of victims. It has been noted, however, that the incidence in Finland rose over the period 1945-1957, then decreased (1958-1967), and has recently increased again (1968-1978). These findings have been related to changing governmental policies concerning the economy, housing, immigration and employment [Oikorinen and Malmstrom, 1969; Lamberg, 1978]. In most countries, however, there has been a steady increase in incidence of maxillofacial fractures due to assault (e.g. Voss, 1983) (see Table 1.1.1).

Patterns of facial injury in these patients are usually of isolated fractures involving the mandible, nose or zygomatic complex, left-sided injury being more frequent than right-sided. This is due to the preponderance of right-handed assailants [Shepherd et al, 1987] who tend to strike the left side of a victim. Injury patterns in the mandible include sub-condylar fractures, with or without para-

TABLE 1.1.1: The Aetiology of Jaw Fractures in Patients Over 15 Years of Age (after Voss, 1983) (%)

	Males		Females		All Adults	
	1970	1980	1970	1980	1970	1980
Violence	44	59	21	36	39	54
Traffic Accidents	21	11	35	28	24	15
Other	35	30	44	46	37	31

symphyseal fractures - the point of impact usually being the symphysis; or angle fractures, this region sometimes being a point of weakness secondary to the presence of unerupted third molars [Rowe and Williams, 1986]. Bilateral sub-condylar fractures or angle ('bucket-handle') fractures are less common, unless the mandible is atrophic. Nasal fractures involve both the bones and septal cartilage, but force is usually insufficient to cause extensive naso-ethnoidal fractures or Le Fort pattern maxillary injury. Zygomatic complex fractures usually involve disruption of fronto-zygomatic, temporo-zygomatic and maxillary-zygomatic sutures, but solitary zygomatic arch fractures may also occur [Rowe and Williams, 1986].

Most studies of facial injuries in assault victims suggest that the majority of victims are young males aged 16-35 years [MacLennan, 1977; Voss, 1983]. The incidence is highest during the summer [Anderson, 1984; Shepherd et al, 1987], and on Fridays and Saturdays [Anderson, 1984; Hedeboe, 1985; Shepherd et al, 1987]. It is striking that, whilst the effects of injury in road traffic accidents have brought about changes in legislation to reduce injury, little or no medical evidence has been used to try to reduce assault rates, particularly in

inner city areas, nor has legislation really begun to limit this increasingly common cause of injury.

In most accounts of maxillofacial fractures, firearm injuries ('gunshot' wounds) are considered as a separate category, but it is clearly appropriate to include them as part of 'assault'. Whilst these wounds are common in wartime [Terry, 1969; Awty et al, 1973], they are seen increasingly frequently in civilian practice, particularly in the USA [Banks et al, 1985]. From the earliest times, the often extensive nature of firearm injuries has been appreciated [Le Fanu, 1960], and management was established as a result of experience principally in the First World War [Kazanjian and Burrows, 1918] and subsequently [Porritt, 1953].

Pattern of injury depends upon the type of weapon. Clarkson et al [1946] analysed 700 missile wounds of the face and jaws sustained during the Second World War: 40% were caused by mortars, 30% by shells, 30% by bullets and less than 5% by grenades, mines or aerial bombs. Low-velocity bullets from small arms produce a significant number of civilian injuries, particularly in the United States [May et al, 1973]. Injuries from shotguns often result from accident or attempted suicide, and the wounds are quite distinct from those produced by other missiles [Spira et al, 1967]. High-velocity projectiles produce wounds with cavitation, widespread tissue necrosis, bone fragmentation and a large exit wound. In contrast, tissue damage is limited in low-velocity wounds, the projectile being partially diverted from its path by bone and often retained in the tissues [Banks et al, 1985]. If an exit wound is present, it is usually of similar size to the entry wound.

Facial injury caused by firearms may be tangential or transverse (high, mid or low level) but, in contrast to many other types of in-

jury, all wounds are compound onto the skin or oral/nasal mucosa and severe disruption of both soft and hard tissues is frequent. Firearm injuries reported by Tinder [1969] in Vietnam affected the maxillo-facial region in 10%. During the Arab-Israeli conflict of 1967, head and face wounds comprised 21% of wounds, neck 4%, extremities 58%, abdominal 2% and thoracic 15% [Ben Hur, 1968]. Incidence of maxillo-facial wounds in war-time is therefore usually reported to be between 10% and 20% of all wounds, which is slightly higher than expected, given random wounding and proportion of total body surface area [Banks et al, 1985; Shepherd and Dobson, in press].

Particularly in wartime, preventive measures have been introduced to protect against maxillofacial injuries. These include the use of helmets [Shepherd and Dobson, in press], and the agreement of the Geneva Convention which, among other measures, attempts to limit the use of projectiles designed to disintegrate on impact and cause more extensive injury [Banks et al, 1985].

1.1.2 Road Accidents

Most studies of maxillofacial fractures carried out before seat-belt legislation for front seat passengers and drivers of four-wheeled vehicles (Western Europe, Australasia and North America) demonstrate that road accidents were the most common cause of facial injury [Rowe and Williams, 1986]. This continues to be the case in the developing world [Silva, 1978; Adekeye, 1980; Khalil and Shaladi, 1981]. In Britain, where road accident victims have been the subject of a great deal of study and research (in contrast to assault victims), and where there is more information concerning overall patterns of injury, incidence and effects of legislation (particularly concerning motor cycle crash helmets and seat belts), there has been a reduction in facial

injuries. In 1978, there were 76,920 deaths and hospital discharges as a result of road accidents, of which 2.8% of victims had fractures of the facial bones, and 5.8% had lacerations of the head, neck or trunk [DHSS, 1978]. Males exceeded females by a ratio of 2.4:1. Surprisingly, even before seat belt legislation, injuries were falling [Royal Society for the Prevention of Accidents, 1980]. Numbers of vehicles increased in Britain from 15.5 x 10^6 in 1971 to 19 x 10^6 in 1980, but there were fewer injuries and adults and children killed in 1980. Seat belt legislation gave rise to a substantial decrease in the overall incidence of death and injury [HMSO, 1984], including a 50% decrease in facial lacerations, but only a 7% decrease in fractures [Shepherd and Jones, 1987]. Christian [1976], in a study of 969 drivers and front seat passengers involved in road accidents, reported that 8.2% of non-wearers of seat belts sustained fractures of the skull and facial bones, compared with 3.5% of wearers. None of the latter sustained skull fractures. Many patients with facial fractures also have head or other injuries, and this and the high fatality rate has clearly been responsible for the effort to find the causes of accidents, and to prevent them [Sheldon, 1955]. Analyses of the causes of accidents have shown that, apart from alcohol and experience and training of drivers [Adekeye, 1980], road curvature, gradients associated with curves and proximity of roadside objects are also important factors [MacDermott, 1978]. Preventive measures, including improved motorway and other road design, have been introduced to take account of these findings. Facial bone 'loading' tolerances have also been calculated [Huelke and Harger, 1969], so that dashboards and steering-wheels may not cause fractures during accidents [MacKay et al, 1973], and laminated windscreen glass has been developed to limit numbers of lacerations.

It has been calculated that motorcyclists are at twice the risk of fatal injuries, compared to pedal-cyclists, and 24 times more likely to sustain fatal injury than motor-car occupants [Special Correspondent, 1979]. Crash-helmet legislation was introduced in Britain in 1973. Protection of the head and face by various designs of crash helmet can be considerable. The full-face type confers most protection [Vaughan, 1977; Aldman et al, 1979].

Incidence of maxillofacial fractures secondary to crashes involving particular types of vehicle depends to some extent on vehicle/kilometre values, and in some countries, such as Holland, the preponderance of bicycles and/or mopeds has brought about more injuries in this group [Van Hoof et al, 1977]. In addition to the preventive measures outlined above, higher minimum age limits, lower maximum speeds, and engine cubic capacity limits and compulsory testing for moped users have been considered, particularly in Holland.

The overall pattern of injuries sustained in road accidents has been studied exhaustively, and is the subject of numerous severity scales such as the Abbreviated Injury Scale [AAS, 1984], which takes into account both site(s) of injury and outcome (survival). Extensive injuries are common, and facial injuries may include comminuted mandibular and maxillary fractures. Maxillary fractures are commonly associated with head (skull) injuries. In the British oral surgery literature, a preponderance of mandibular fractures was first recorded (67% of fractures, 1948-1955, Rooksdown House, Basingstoke, UK [Rowe and Killey, 1968]), but a gradual change toward more middle-third injury then followed (e.g. 58%, 1974-1981, Royal West Sussex Hospital [Rowe and Williams, 1986]). At first sight this is hard to explain, but a likely explanation is that, whereas middle-third (including zygomatic) fractures were previously treated by plastic surgeons [Gillies et

al, 1927], oral and maxillofacial surgeons now treat most of these. This type of problem now influences the recording of nasal fractures, in that patients with these injuries are often managed by oto-rhino-laryngologists, and therefore escape the notice of oral and maxillo-facial surgeons.

Demographic characteristics of victims of road accidents with facial fractures include a wider age distribution compared with assault victims (although mean age is still approximately 25 years), and more equal distribution among males and females [Rowe and Williams, 1966]. Injuries from road accidents, in common with assault, are most common late at night, as well as at peak 'rush-hour' times [HMSO, 1980].

1.1.3 Falls

There is increasing demographic evidence that many patients reporting 'falls' as the cause of maxillofacial injury particularly young males, are in fact assault victims [Hill et al, 1984] . Falls account for between 12% and 28% of fractures in the nine series of 8,000 patients surveyed by Vincent-Townend and Langdon [1986]. Most of these injuries occur in the elderly, although the classic 'guards-man's injury' (bilateral sub-condylar and symphyseal fractures) is more likely to affect younger persons. The edentulous elderly mand-ible is weakest distal to the mental foramena, and more frequently fractures there. Zygomatic fractures may occur if the patient falls onto furniture, although left-sided injury may suggest assault. Falls may occur as a result of a vaso-vagal attack, epileptic fit or other cause of loss of consciousness.

In children, as in assault, different aetiological factors have been reported, particularly in developing countries, where falls from

trees are reported to be a common cause of injury [Adekeye, 1980]. In Britain, facial-bone fractures in children are most often caused by falls [Carroll et al, 1987].

1.1.4 Industrial Accidents

Legislation concerning safety in places of work has reduced the incidence of facial injuries from this cause in Western industrialised countries, though in some poor but industrial societies (e.g. India) industrial accidents are second to road accidents as cause of facial trauma [Kapoor and Srivastava, 1983]. In the latter study, of 320 patients treated between 1976 and 1980, 24% of fractures were due to industrial accidents, whereas the incidence in Iowa, USA [Olson et al, 1982] was 0.7% over a similar period. Industrial injuries can be severe, however, and may include falls, crushing or entanglement with moving machinery. Incidence of injury may reflect development of a particular industry and, in the Grampian region of Scotland [Brook et al, 1983], accidents in the off-shore oil and gas industries gave rise to many maxillofacial injuries soon after 1960, though following the introduction of safety measures these declined over the period to 1980.

1.1.5 Sports Injuries

In common with most other causes of maxillofacial injuries, the incidence of sports injuries differs in the West from those in the developing world, and this is not surprising in view of the numbers of participants in sports. Hill et al [1985] appear to be the only workers who have attempted to relate frequency of injury with participation rate in sport in Britain. They concluded from their study in Bradford (130 patients, 1979-1984) that risk of facial injury was

highest in rugby football, cricket and soccer. Most fractures involved the zygoma (41%), mandible (31%) or alveolus (26%). Maxillary fractures were rare. The risk of mandibular fracture was higher in rugby football than soccer, though zygomatic fractures were evenly distributed. Rugby was the commonest cause of nasal fractures. Swimming (slipping on wet surfaces), hockey, golf and skating also produced some injuries. Overall, males were more frequently injured than females, and most were in the 20–40 age range though, in another study, females outnumbered males in skating accidents [Tubbs and Crompton, 1977]. In cricket injuries, the 0–9 years and 40–49 years age groups appear to experienced more injury (taking participation rate into account) than other groups, and this has been attributed to reduced 'reaction times' and to the fact that cricketers tend to continue playing till older ages than do rugby or soccer players [Hill et al, 1985]. Interestingly, despite recent concern about head injuries in boxers, the incidence of maxillofacial fractures appears to be relatively low [Rowe and Killey, 1968; Hill et al, 1985], presumably because padded gloves are used. Clearly this is an example of the introduction of preventive measures to limit injury and, in other sports, helmets with projections to protect the face (cricket), mouth guards (rugby football) and masks (fencing) have either been recommended, or are compulsory.

1.1.6 Pathological and Iatrogenic Fractures

The jaws, particularly the mandible, may fracture through any lesion which weakens that part of the skeleton. Benign lesions include cysts, usually radicular or residual [Marshall, 1964], but occasionally idiopathic bone cavities, haemorrhagic 'cysts' and odontogenic keratocysts give rise to fractures. Malignant tumours

arising primarily in the jaws are rare, and tend to cause bony expansion rather than resorption and fracture, but secondary deposits of breast, lung, prostate, thyroid and kidney tumours have all been the cause of mandibular fractures, particularly of the condyle and body regions [Shafer et al, 1983]. Pathological mandibular fractures have also been reported as complications of myelomatosis [Kyle, 1975] and local osteomyelitis [Harris and Sowray, 1985].

Fractures of the facial skeleton may also complicate dental treatment, usually extraction of teeth. The most common fracture involves the maxillary tuberosity during extraction of upper molar teeth [Archer, 1966], although the mandibular angle occasionally fractures during extraction of lower third molars [Killey and Kay, 1965; Barclay, 1969; Hamish, 1971].

1.2 Personal Violence

1.2.1 Introduction

Criminal activity has been a source of concern to most societies, and certainly of concern to individual victims. This remains the case today. This section summarises what is known about violent crime, including its extent, the various types of violence, assailants, victims and apparent patterns and trends. The previous section dealt with prophylactic measures which have been introduced to reduce injury, and measures taken to prevent and reduce violent crime in Britain are described in this section. The term 'personal violence' includes assault where the victim is personally involved, as opposed to crimes where the victim is not directly involved, such as arson and criminal damage. Personal violence includes all 'violence against

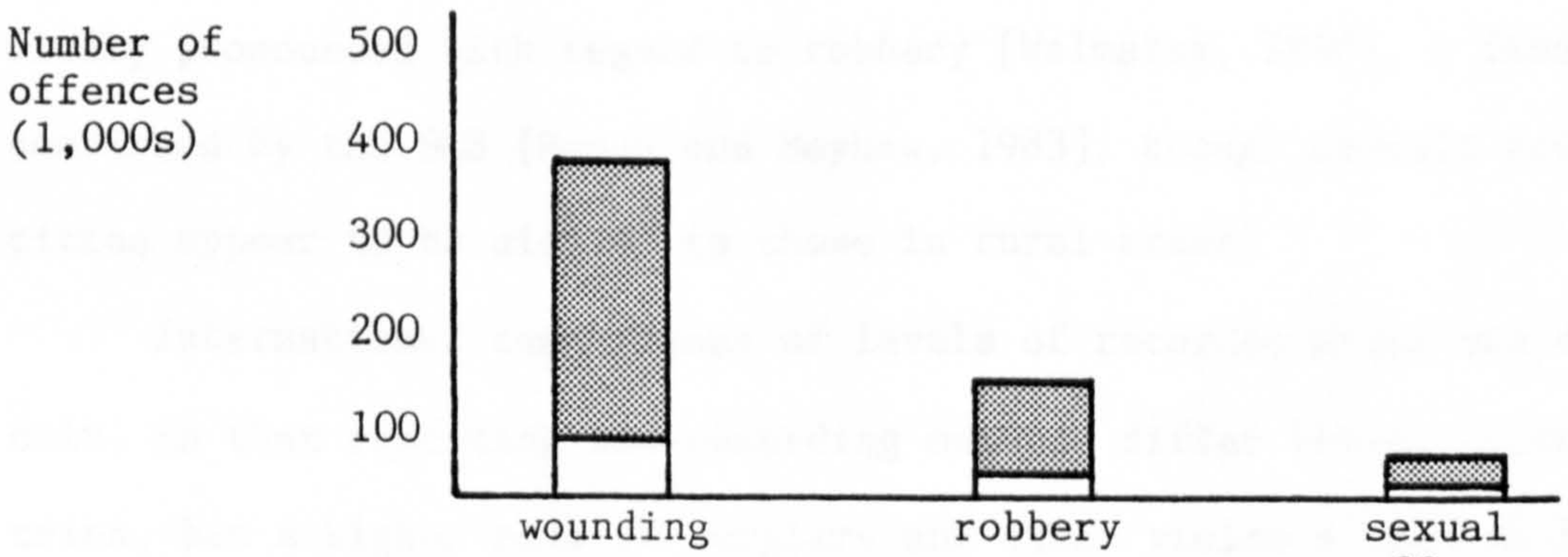
the person' [Criminal Statistics, 1950-1986], encompassing homicide, wounding, robbery and sexual assault.

1.2.2 The Extent of Personal Violence

The two principal sources of information regarding the epidemiology of violence in Britain are Police Crime Statistics [HMSO] and the British Crime Survey [Hough and Mayhew, 1983]. In 1984, 154,000 instances of personal violence were recorded by the police in England and Wales. These included 112,000 offences of wounding, 25,000 of robbery and 15,000 sexual assaults. In addition, there were 800 cases of homicide (murder, manslaughter and infanticide) or attempted murder. Overall, these offences represent 5% of all recorded offences [Home Office, 1985], and included major offences such as murder and rape; and relatively minor offences such as deliberate pushing, leading to bruising (assault; actual bodily harm) and the forceful taking of a coin from one child by another in a school playground (robbery). Offences classed as 'endangering life' [Home Office Criminal Statistics] were 10,700 in 1985 - 0.3% of all recorded crime. Although personal violence has represented a minor aspect of total criminal activity, recent evidence demonstrates dramatic increases over recent years. Woundings and assaults doubled over the period 1974-1984 (62,000-112,000), and robbery trebled (8,700-24,900). The incidence of recorded rape increased by one third (1,050-1,430), though the total numbers of sexual assaults decreased by 11%. There was also a 17% increase in homicide over the period 1974-1984. Overall, there was in this period an increase in personal violence recorded by the police of 72%, surprisingly similar to the 69% increase in all recorded crime. This included a 38% increase in the incidence of most serious offences (those endangering life, rape and armed robbery).

The findings of the British Crime Survey [Hough and Mayhew, 1983] demonstrate, however, that only about one quarter of violent crime is recorded by the police. The British Crime Survey (BCS) was carried out, first of all in 1983, in response to increasing statistical and criminologic evidence that crime statistics collected by the police were inaccurate. The BCS involved interviews of one person over the age of 16 years in each of 11,000 randomly-selected households in England and Wales and 5,000 homes in Scotland (addresses obtained from the Electoral Registers). The purpose was to record crimes committed against interviewed individuals during the previous 12 months, to record details of particular offences, and to investigate how people's regular activities affected their chances of becoming a victim (spare time activity, drinking habits, etc.). The extent of wounding, robbery and sexual offences is set out in Table 1.2.1 in terms of recorded and unrecorded crime, based on police crime statistics and BCS 'best estimates'.

FIGURE 1.2.1: Levels of Recorded and Unrecorded Crime (1981)



Only 23% of woundings appeared in police crime statistics, only 11% of robbery and 26% of sexual offences. Although these findings are sub-

ject to sampling error, they may themselves be under-estimates owing to respondents' forgetfulness and reluctance to admit some incidents (e.g. domestic violence).

The true extent of personal violence is thus uncertain, though the BCS has gone some way towards clarifying the situation. It is striking, however, that, in contrast to road accidents, falls, industrial accidents etc., there has been as yet no attempt in Britain to tap medical sources of information. One Danish study [Hedeboe, 1985] concluded that males aged 15-19 years were most commonly involved (as victims), but no assault rates were calculated. It has been suggested that victimisation itself is useful as an indicator of inner city deprivation [Smith, 1986], and it therefore seems likely that hospital-generated data might have particular application as a determinant both of criminal activity and of social deprivation.

Regional and International Comparisons

The extent of recorded personal violence varies from one part of Britain to another, but violence against the person per 100,000 population tends to be highest in areas with large cities. This is especially pronounced with regard to robbery [Walmsley, 1986], a finding confirmed by the BCS [Hough and Mayhew, 1983], though assault rates in cities appear to be similar to those in rural areas.

International comparisons of levels of recorded crime are difficult, in that reporting and recording methods differ between countries, but a higher rate of burglary and other violence than in Britain has been reported in the United States and Canada - a similar rate in Australia [Skogan, 1978].

Offenders

The majority of assailants convicted in 1984 of wounding or assault were male (93%), as was the case with robbery (95%) and sexual

offences (99%). 86% of those convicted of homicide were male. Over 50% of offenders in cases of wounding or assault were aged between 17 and 24 years, and more than 75% between 14 and 29 years. Findings relating to robbery and rape were similar but, with regard to less serious sexual offences (indecent assault), 30% of convicted offenders were aged between 30-49 years and 14% over 50 years. Surprisingly, though numbers of sexual offences committed by females against males were fewer (see above), the ages of offenders were much less clustered, being almost equally distributed among the 14-20, 21-29, 30-39, 40-49, and over-50 age groups.

In the period 1974-1984, trends appear to be towards less convictions of juveniles for wounding, assault or sexual offences, although this might be due to the increased use of cautioning rather than conviction. There is evidence, however, of a real decrease in robbery among juveniles (36% of convictions in 1974, 23% of convictions in 1984). Overall, convictions for violence against the person (98% woundings/assaults and 1% homicide) increased by 52%, and for robbery by 33% [Police Crime Statistics, 1985].

1.2.3 Personal Violence, 1984

The Home Office Statistical Department has detailed information about personal violence occurring in 1984, from most local police force records in England and Wales [Walmsley, 1986], and this, together with the BCS [Hough and Mayhew, 1983], provides one of the most complete picturesof violence available.

Homicide

The incidence of homicide is about 11 victims per million population. Children under the age of 1 are most at risk of homicide (32 per million population, 1984), but those aged between 5 and 15 are

least at risk (4 per million, 1984). Males are slightly more at risk than females (by 2 per million population). In 75% of cases, the victim is acquainted with the assailant, in 16% of cases the assailant is unknown, and in 9% of cases the assailant is unidentified. Weapons used included sharp instruments (35% of cases), blunt instruments (15%) and firearms (10%). The remaining 40% of homicides are carried out by asphyxiation, punching or kicking. Approximately 50% of these offences take place during quarrels or bouts of temper, and 10% during theft.

Wounding

This category of personal violence can be subdivided into serious (attempted murder and other attacks endangering life) and less serious (categorised by the police as 'other wounding' or 'assault' [Criminal Statistics, 1984]). Recorded cases of less serious wounding outnumbered serious woundings by a ratio of 20:1. Males are five times as likely as females to be victims of more serious wounding, and three times more likely to be victims of less serious offences. This difference is not apparent in all age groups in respect of serious wounding, however, and in the 10-24 age group males are at greater risk, whilst in the 25-59 age group they are at lesser risk.

In both types of wounding, both in males and females, rates are maximal in the 16-24 age group (900 victims per 100,000 males; 300 victims per 100,000 females). The next most 'at risk' group were those aged 25-39 years (Table 1.2.3(a)).

70% of assailants in incidents where the victim is aged between 16 and 24 years are also in this age group, but where victims are over the age of 25 years, the assailant tends to be younger, and in children (0-9 years) 75% of assailants are aged 16-39 years. Though off-

ences committed by older (>60 years) people are few, victims tend to be aged 25-39 (39% of offences).

Police records demonstrate that in about 12% of cases in 1984, victims and assailants were related, and the data provided by one

TABLE 1.2.3(a): Wounding: Recorded Offences per 100,000 Population

Age of Victim	More Serious Woundings		Less Serious Woundings	
	Males	Females	Males	Females
0-9	1	1	51	28
10-15	8	1	448	178
16-24	58	9	866	313
25-39	29	7	415	168
40-59	11	2	189	65
60+	2	1	48	15
TOTAL	109	21	2017	767

[Source: Criminal Statistics, England and Wales, HMSO, 1985]

police authority (Hampshire) suggests that assailants are completely unknown to victims in at least 50% of woundings. The BCS suggests that victims know the identity of assailants in 30% of cases, and they are husbands, relatives, lovers or ex-lovers in 16%. It is likely, however, that neither police records nor the BCS accurately assess the true extent of violence where assailants and victims are part of the same family and, as yet unexplored medical sources of information, may be a useful adjunct in this regard.

In contrast to homicide, weapons are used (bottles, hammers, knives or firearms) in 75% of cases of serious wounding recorded by the police, but only in 20% of cases of less serious violence. Knives or firearms are very rarely used (5% of offences). This analysis does

not appear to have been carried out in hospital patients in Britain, but a Danish study of assault victims demonstrated that weapons had been used in 12% of cases [Hedeboe, 1985].

Location of offences recorded by the police varied according to seriousness of wounding - serious wounding is usually carried out indoors. Males are more often wounded out-of-doors than indoors, but the reverse is true of females and children under the age of 10 years. Location of offence also varies with age; males over 40 years are more likely to be seriously wounded indoors, in contrast to those under 40 years [Walmsley, 1986]. Females aged 10-24 years are more likely to be less seriously injured outdoors, although overall injury indoors is most frequent. In the Danish study of hospital attenders, most males were assaulted near bars or clubs and in the street - most women at home.

Details of time of day of wounding are only available from a small number of police forces, but these indicate that most offences are carried out between 10.00pm and 2.00am (40%) and between 6.00pm and 10.00pm (20%). Surprisingly, perhaps, there is no difference, in this respect, between offences occurring indoors and outdoors, but serious wounding tends to occur later in the evening (see Table 1.2.3(b)). It has been conjectured that this suggests that fighting is more likely to lead to serious injuries at about the time of pub closing.

Robbery

This is defined as 'acquisition of money or other property using force directed against someone', and may therefore involve the use of firearms to obtain large sums of money at one end of the scale, and wrenching a bag from someone at the other. In 1984, police-recorded robbery from men was recorded in 66% of cases, in contrast to 'theft

TABLE 1.2.3(b): Wounding: Time of Day and Seriousness of Offence, 1984

Hour of Day	More Serious Woundings (%)	Less Serious Woundings (%)
6-10	3	3
10-14	7	10
14-18	14	19
18-22	15	20
22-2	40	34
2-6	9	6
Not Known	11	8
TOTAL	100	100

[Source: Walmsley, 1986]

from the person' (distinguished from robbery only by the absence of violence), where two-thirds of offences involved female victims. Overall, younger men and older women were most frequently victims. In relation to robbery, rates were highest (115 per 100,000 males and 65 per 100,000 females) in the 16-24 age range (1984 data). Violence was much more likely to be directed against males than females. The BCS supports these findings [Hough and Mayhew, 1983].

Some 50% of recorded robberies are unassociated with injury, and injury is classified by police as 'serious' in only 2-3% of offences. Most robbery occurs outdoors (72% from males, 28% from females) - shops (62% from males, 38% from females) are the next most common location. The timing of robbery appears to be more variable than was the case with wounding, and 75% of offences are evenly distributed between 2.00pm and 2.00am [Walmsley, 1986].

Sexual Assault

Not surprisingly, the majority of recorded offences have been directed against women (80% in 1984). Most indecent assault involves victims under 16 years (>50%), but only 20% of rapes. Overall, less

than 5% of victims are over 40 years of age. The highest rate for indecent assault in 1984 (190 per 100,000 females) occurred in the 10-15 age group, and the highest rate for rape (20 per 100,000 females) in the 16-24 age range. In males, 97% of victims were under 25 years of age, and 80% under 16 years. These findings are similar to those in a study of victims known to the Courts [Walmsley and White, 1979]. Locations of sexual assaults directed against females were most commonly private homes, except in the 16-24 age group, where rapes most often occurred outdoors. In the case of indecent assault, most directed against those under 16 years took place in private dwellings, and most involving the 16-59 age range occurred outdoors.

1.2.4 The Circumstances of Personal Violence

Previous sections (1.2.1 and 1.2.2) discussed the available statistical information relating to broad categories of personal violence, but there are clearly subdivisions which can be made. For example, wounding may take place in an inner city street brawl, or in the victim's own home. Effective measures to counteract and prevent wounding are more likely to be identified if these categories are considered separately.

Alcohol and Violence

There seems no doubt that alcohol consumption is associated with all kinds of violent crime, both on the part of victims and assailants [DHSS, 1981], though a direct causal relationship has been harder to demonstrate [Walmsley, 1986]. The principal problem is that although there is a strong correlation between drinking and violence, and many violent people commit offences after consuming alcohol, most people drink alcohol but are not violent. Three arguments have been put forward in attempts to show that alcohol is not a direct cause of

violence:

1. That drinking alcohol and violence are both the result of previous deprivation of some kind.
2. That fights in public houses result not solely from drinking alcohol, but from the proximity of numerous males.
3. That the reason for disproportionate numbers of alcoholics and heavy drinkers in prisons is not that alcohol has caused them to be violent, but that they are relatively unable to avoid arrest.

On the other hand, however, there is clear evidence that alcohol directly causes violent behaviour, particularly in males under stress of some kind and in males who are unable to develop long-term relationships [Nicol et al, 1973]. In addition, Myers [1982] found that one group of assailants reported drinking more alcohol at the time of committing an offence than did a control group. Another study showed that a history of violent offences distinguished prisoners who were heavy drinkers from other groups of prisoners [Walmsley, 1986]. To further elucidate the role of alcohol, it has been suggested that details of alcohol intake by offenders be recorded in each case, but this research methodology has yet to be implemented [Collins, 1982]. The consensus of opinion is that whilst association between alcohol and violence is clear, direct cause and effect are in doubt - the relationship depending on other factors. A review of the effects of alcohol and the characteristics of drinkers is contained in Section 1.5.

City Centre Violence

Studies of city centre violence have been carried out in Birmingham and Coventry [Poyner, 1980], Southampton [Ramsay, 1982], Sunderland [Ashley, 1984] and Newcastle [Hope, 1985], and these have demonstrated an association between violence and alcohol, and not

surprisingly between violence and pubs, clubs and dance halls in particular. Peak incidence of violence is at the end of licensing hours, whether in relation to public houses or clubs where extended 'special licenses' have been in operation [Hope, 1985]. In Southampton, 43% of incidents took place between 10.00pm and 3.00am, and more than 25% in the two five-hour periods between 10.00pm and 3.00am on Friday/Saturday and between 10.00pm and 3.00am on Saturday/Sunday [Ramsay, 1982]. Though the pattern appears to be similar in other cities, no such study appears to have been carried out in relation to city-centre hospital accident and emergency departments - a surprising omission.

Violence appears to be concentrated in a few city-centre streets, often those containing a relatively large number of public houses, and results from friction between different groups of young males moving from pub to pub, and of friction between them and other customers and public house staff [Hope, 1985]. Violence also follows the emptying into the street of clubs and dance halls at about the same time, and Ramsay [1982] has described violent incidents at food stalls. On these occasions a common situation developed when

> " ... individual worth and identity were at stake, in front of other bystanders, in an impersonal setting".

Provocative comments or movements quickly escalated into fighting.

The prevention and control of this violence is not easy, nor can injuries be prevented, by the adoption of simple measures such as wearing protective clothing, or by legislating against excessive alcohol intake. Realistic measures which have been considered include: improvements in policing; licensing regulations; and the management of licensed premises [Hope, 1985]:

1. Increased police supervision of city centres at public house and club closing times.

2. Training of bar staff in inter-personal relations and management, to reduce risk of confrontation.
3. Improvement in public transport to enable faster transfer of customers from city-centre premises to outlying residential areas, particularly late at night.
4. More immediate action to close premises where violence is frequent.
5. Alterations in the number and distribution of public houses and clubs.
6. Alterations to the character of public houses to make violence less likely.
7. Encouragement of the building of establishments catering for young people (ice rinks, dance halls, etc.) in outlying areas, therefore discouraging dangerous crowding of such premises in city centres.
8. Improved training of police about management of licensed premises.

Some of these measures have been adopted, particularly in city centres listed above, but research indicates that specific measures must be tailored to particular circumstances, each city centre being unique. Better coordination has also been urged between police, licensees and local authorities in order to bring about preventive action, and this seems particularly important in view of a tendency in the past to "dissipate police experience by treating each incident on a one-off basis" [Ramsay, 1983], rather than drawing information together. Difficulties in adopting preventive measures are numerous, however, and include cooperation of bodies with different and sometimes competing priorities.

No such study appears to have been published concerning Bristol city centre.

Violence on Public Transport

Though not a large problem in most cities, in terms of absolute numbers of incidents, a high proportion of bus staff in most transport authorities are assaulted at some time in their working life-time [Walmsley, 1986]. In London, between 1977-1983, there were some 1,000 to 1,250 assaults on bus staff annually in the London Regional Transport area, although only about one third of these were recorded by the police [Chambers, 1984]. The rate of assault, taking into account the numbers of passengers, was highest in the evenings, particularly after licensing hours. Males between 16 and 21 years were mostly responsible. Surprisingly, conductors were more vulnerable than solitary driver/conductors, and this has been attributed to the more active 'policing' carried out by conductors [Chambers, 1984]. The most common causes of violence were disputes concerning fares: sometimes the attitudes of bus staff themselves played a part.

Preventive measures have included the introduction of more one-man-operated buses, protection of drivers/conductors by screens and, in one area, the encouragement of police to "hop on a bus" as part of official duty. Again, pooling of information to identify dangerous routes and peak assault times has been urged [Ashley, 1984; Chambers, 1984], along with improved training of staff in customer relations. Another measure recommended by Chambers [1984] was the introduction of 'flat fares' to avoid fares disputes, and he also suggested that journeys on 'last buses' should be paid for by the breweries, not least to discourage drinking and driving.

Football Hooliganism

Football hooliganism has been defined as 'violence among suppor-

ters before, during and after matches', and has been of particular concern since 1985 when 39 deaths and 400 injuries occurred at the European Cup Final in Brussels involving Liverpool Football supporters, and a spectator was killed after a match between Birmingham City and Leeds United. It has been suggested that hooliganism is not peculiar to football but has deeper roots in society; young males seeking opportunities to assert themselves in their own social group [Ingram, 1985]. It has been suggested that, in order to work their way up the hierarchy of "novices, rowdies, nutters and graduates", members of crowds need to demonstrate their "hardness", by a willingness to fight to achieve vitally important "reputations". The questions remain, however, as to why violence is necessary in order to achieve self-esteem, and why football matches have emerged as a main occasion for this behaviour. Part of the answer to the former question seems to come from investigations into the backgrounds of typical football supporters, which found low levels of education, frequent periods of unemployment, habitual violence as a means of assertion and, importantly, intense feelings of attachment to 'in-groups' and hostility towards 'out-groups' [Suttles, 1968; Robins and Cohen, 1978; Dunning et al, 1982]. As to the second question, there is debate as to whether there has been a real increase in football violence in recent years. For example, between 1895 and 1915 the Football Association ordered the closure of 46 grounds as a punishment for violent incidents [Dunning et al, 1983]. Matches may, however, have become the occasion for violence because of the wish of supporters to stamp their working-class identities on an increasingly professional and commercial sport, and because of the massive publicity tending to 'build-up' big games as conflicts [Taylor, 1971, 1982]. In addition, increasing public awareness of football violence resulting from media coverage

and styles of newspaper reporting may give the impression, erroneously, that football violence is on the increase, both on and off the field of play ["Hungry Wolves draw blood", "Blisset's bullets find target", Guardian; "Grip of fear", "Blue Peter blasted", Sunday Mirror, all 1983]. Certainly, the indignant, outraged reporting of football violence today is a new phenomenon [Hall, 1978].

Before 1985, efforts to control hooliganism appeared to be having some effect [Walmsley, 1986]. Police training had been introduced to teach communication skills with respect to football fans, and troublesome supporters were segregated or ejected. Transport of supporters was also more efficient, and availability of alcohol on trains had been limited. A government report [Department of the Environment, 1984] also stressed cooperation between football and public authorities and the police, the influence of the style of media reporting (see above), and recommended that offenders should be sent for punishment to attendance centres on Saturday afternoons. As a result of the injuries and fatalities in 1985, the Sporting Events Act [1985] was introduced which banned alcohol from being sold in, or brought to, football grounds, or on trains or coaches designated as 'football specials'.

Drug-Related Violence

Evidence of a causal relationship between drugs of abuse (other than alcohol) and violence is limited, and at present seems largely anecdotal [Paul, 1975]. This seems a fruitful area for future research, particularly involving medical investigators. Violence has occasionally been directed against pharmacists and customs officers, during attempts to procure or smuggle drugs [Walmsley, 1986] but there is little other clear evidence that drug trafficking contributes to violent crime. With regard to the effect of drugs of addiction on

behaviour in intoxicated individuals, there is some evidence that amphetamine-type drugs can give rise to aggressive behaviour, though in a study of juvenile male offenders no differences in criminal histories (including violence) were detected between those demonstrating signs of recent amphetamine use and others [Scott and Willcox, 1965]. In contrast to amphetamines, opium derivatives have a depressive effect on the central nervous system, resulting in passive behaviour and little likelihood of aggression and violence. In addition, there is no evidence of an increase in violent crimes in individuals following notification as opioid-drug addicts [Mott, 1981; Home Office, 1985], though incidence of illegal possession of drugs, shop-lifting and petty thefts did increase. Notwithstanding this, isolated violent offences have been reported in addicts [Hartnell et al, 1980; Oppenheimer E et al, 1979].

Only one study of a small number of drug abusers, including some amphetamine addicts, provides evidence of an association between violence and addition, although 'violence' was taken to include criminal damage and some motor vehicle offences [Gordon, 1973]. Nevertheless, this study paves the way for further research.

There is little evidence, then, that drug-associated violence is currently a serious problem in Britain, though measures have been introduced to deal with the rapidly increasing use and other effects of these substances. This has principally involved the availability of more funds for more effective police action, and the introduction to Parliament of legislation designed to provide new powers to trace, freeze and confiscate the proceeds of drug trafficking [Walmsley, 1986].

Racially-Motivated Violence

Recent literature concerning violence involving protagonists of

different racial groups leaves little room for doubting that this is a serious problem in British society [Home Office, 1981; Policy Studies Institute (PSI), 1984], although racially-motivated attacks appear to represent only a small proportion of total violence (3%) [Home Office, 1981]. However, such attacks often give rise to alienation of minority racial groups and attract a great deal of media attention. A problem in estimating the true incidence of such attacks has been lack of census information concerning racial background, and in the 1981 Census, for example, only "place of birth of Head of Household" was included [Office of Population Censuses and Surveys, 1982]. The Home Office study [1981], which found that blacks (and particularly Asians) were much more likely to be victims of assault than whites (10 times and 50 more likely respectively), was confirmed in a second report [PSI, 1984], but there appears to be no available quantitative information which clearly demonstrates current trends in this aspect of violence. The opinion of most interviewed representatives of black and Asian communities is that attacks are increasing [PSI, 1984]. Racially-motivated attacks appear to take the same form as other violent incidents involving protagonists from the same racial group, but in addition there is evidence that they are characterised by lack of previous argument, gangs of assailants armed with various weapons, and the use of racial insults [Home Office, 1981]. Fear of attack on the part of members of racial minorities may be amplified by media reporting, leading to defensive, isolationist attitudes and resentment of, and lack of trust in, the police.

Measures which have been introduced to deal with this problem include the introduction and development of community policing; regular liaison between representatives of minority groups and senior police officers; and improved training of police in community and

race-relations, particularly to develop an understanding of the effects on a victim of a racially-motivated attack. Local police forces are also collecting data from which to establish trends, and this exercise is being monitored annually by Inspectors of Constabulary [Walmsley, 1986].

Family Violence

The true incidence of domestic violence in Britain is unknown, largely because few offences are reported to the police, and also because little information was divulged to interviewers during the British Crime Survey [1983]; for example, the BCS revealed only one rape. There seems no doubt, however, that this is an important problem, particularly as 15% (250 cases) or murder, manslaughter, attempted murder and murder threats in 1981 related to violence between spouses and cohabitants, and 6% (6,730 cases) of wounding and serious assault [Home Office, 1985]. In addition to this, the Select Committee on Violence in Marriage [1975] requested the Department of the Environment to ask local authorities and voluntary organisations to provide refuge accommodation for one family per 10,000 population.

Walmsley [1986] states that "no clear body of knowledge has been established" (concerning domestic violence), and

> " ... this is due to the fact that such violence is of interest to such a wide range of disciplines, e.g. sociology, psychology, psychiatry, medicine and criminology, so that controversy is inevitable."

This rather defeatist attitude has resulted in the appearance of official reports containing very little information emanating from most of these disciplines (particularly medical), such as the report Personal Violence [Walmsley, 1986]. This appears to be an area where Accident and Emergency Department-based collaborative research might be of considerable benefit.

Wife Battering

The term 'battered' is deliberately emotive, and was introduced by Erin Pizzey [1974] to describe female victims of violence within marriage or cohabitation. It implies that repeated blows are struck, usually by a man who has lost his temper. An accepted definition of the term is a woman who has received deliberate, severe, repeated, demonstrable physical injury from her marital partner [Gayford, 1975].

Violence within marriage, whilst increasing, is certainly not a new phenomenon [Hansard, 1874; Cobbe, 1878; Stone, 1977]. In the last century, the causes were mainly alcohol, jealousy, destructive attitudes, overcrowding and social deprivation [Cobbe, 1878]. More recently, a report by the Royal College of Psychiatrists identified almost identical predisposing factors, but included immature or psychopathic personality, cultural factors and drug abuse [Scott, 1974]. Hypotheses for the causes of marital violence have centred on the importance of the relationship between the man and his mother, and have also postulated that the wife often brings violence on herself in some way [Snell, et al 1964], though feminist groups have hotly disputed this, and have emphasised the difficulties women face in avoiding violence. There are few places of refuge for women and children who wish to leave a violent man. It has been suggested that violence within marriage initially occurring after the man's fortieth birthday is more likely to be a symptom of a psychotic disorder than violence in younger men, who are more likely to have a psychopathic personality [Faulk, 1974].

There appears to be a strong association between wife battering and other types of family violence - particularly child abuse [Royal Scottish Society for the Prevention of Cruelty to Children, 1974; Smith, 1985]. In one important study, 40% of husbands who battered

their wives had also themselves been exposed to violence as children [Gayford, 1975]. This UK study also highlighted families of Caribbean or Irish descent as particularly susceptible to violence within marriage.

Unemployment appears to be a common problem amongst battering husbands. Gayford [1975] reported that 50% of husbands responsible for battering had been unemployed at the time of the offence (when unemployment in Britain was only 5%) and, in an Australian study, the unemployment rate among battering husbands was nearly 30 times that in the male population [Windschuttle, 1980].

Jealousy on the part of husbands appears to be a common factor in assault, and some husbands consider all men to be such a threat that wives are prohibited from conversing with any man. Furthermore, the husband may interpret relationships between his wife and other women as homosexual, and equally undesirable. The wife, therefore, often becomes increasingly isolated from outside contact, and may only succeed in drawing outside attention by suicide attempts, usually with drug overdoses [Shepherd et al, in press]. It seems possible that changing roles of men and women in modern society are, to some extent, the reason for marital difficulties and subsequent violence, particularly if partners' expectations are not fulfilled with regard to money and sexual relationships [Walmsley, 1986]. Measures which have been suggested to remedy these problems include improved education in schools and youth organisations. In the past, domestic violence has not been dealt with primarily by legislation, the police or the criminal justice system, but there has recently been recognition that police training should include instruction concerning difficulties and stresses within families [Parliamentary Select Committee on Violence in Marriage, 1975]. The role of the Courts is also changing, with the

introduction in January 1986 of legislation designed to compel a spouse to attend Court as a witness of violence either to themselves or a child [Police and Criminal Evidence Act, 1984].

Child Abuse

The 'battered child' syndrome was first described by Kempe et al [1962], who, like Erin Pizzey ('battered wives') chose an emotive title to describe the physical, emotional and psycho-social aspects of abuse. The terms 'child abuse' and 'non-accidental injury' have also been used.

The incidence of child abuse, like other types of family violence, is largely unknown, although in Britain this has been estimated as 300 cases per million population annually [Kempe and Helfer, 1972], and is thought to be increasing [Ounstead et al, 1974]. Child abuse is, however, far from being a recent phenomenon [Radbill, 1968; Bakan, 1971]. Almost uniquely, child abuse is one area of personal violence where collaborative research involving accident and emergency staff, psychiatrists, social workers, the police and other agencies has led to improved management [Hall, 1974] through a team approach.

Mothers of battered children share several characteristics. They are young (mean: 19 years at birth of first child compared with a national average of 23.3 years) [Gill, 1969; Skinner and Castle, 1969; Smith et al, 1975], the risk of battering diminishing with increasing parental age [Lukianowicz, 1971]. Low social class (socio-economic groups IV and V), emotional immaturity and inadequate training in child-rearing practices are also characteristics of the mothers [Smith et al, 1975]. In addition, there is evidence that mothers tend to be neurotic, the usual symptoms being anxiety, depression or a combination of the two [Smith et al, 1975], and a large minority of mothers report unhappy childhood experiences, often sustaining injury at the

hands of their own parents [Oliver and Cox, 1973]. Fathers have been identified as psychopathic (a characteristic shared with fathers convicted of infanticide [Scott, 1973]) and often have criminal records, but there is controversy concerning the role of alcohol [Young, 1964].

Elder Abuse

The frail elderly are a part of the elderly population who require regular support and assistance, often from family members, many of whom are willing and prepared to provide this [Seigel, 1976; Brady et al, 1979]. There is evidence, (again mainly anecdotal [Shukla, 1985]), however, that more relatives are becoming either unwilling or unable to provide these services in a satisfactory, humane manner, causing emotional and physical neglect and abuse [Phillips, 1980; Hickey and Douglas, 1981]. Pioneer researchers concerned with elder abuse tended to assume a common cause for all types of family violence, particularly in relation to dependent relatives (children as well as the elderly), but it is only recently that controlled trials have been carried out, and even these do not as yet give a clear indication of the typical circumstances of abuse [Phillips, 1983]. Those that have been identified include: simple neglect by relatives in terms of visiting, corresponding or telephoning regularly; neurotic behaviour and dejection or depression states. Surprisingly, in one controlled trial involving matched groups of abused elderly and non-abused elderly, no differences were detected between 'caring' relatives in terms of age, anxiety levels, anger/hostility, availability, involvement of other helpers (friends, church visitors, neighbours, etc.) or social services agencies [Phillips, 1983]. Other, mostly uncontrolled studies, have suggested, however, that high stress levels among carers is a factor [Gelles, 1972], and also increasing vulnerability and physical dependency [Johnson, 1979;

Block and Sinnott, 1979; Hickey and Douglas, 1981].

Sexual Assault

As has been described above, although overall numbers of recorded sexual assaults (indecent assault, buggery and rape) fell by 11% over the period 1974-1984, the incidence of rape rose by 36% (1,052-1,433 cases) [Crime Statistics 1974-1984]. This problem has aroused great public, press and political concern, with the effect that rape is seen as a 'nastier' offence than previously. There is increasing evidence that motivation to rape is concerned more with aggression (like other personal violence) than simply sexual factors [Walmsley, 1986], and it is therefore not surprising that incidence is increasing at the same rate as other violence. An additional factor, however, is the effect of the Sexual Offences (Amendment) Act, 1976, which enables victims to remain anonymous, therefore possibly leading to greater recording of offences. The principal demographic characteristic of rape assailants is young age (50% aged between 17 and 24 years, 30% between 25 and 39 years, 10% under 16 years [Walmsley and White, 1979]). About half the assailants are complete strangers, one quarter are well-known, and the remainder are acquaintances. Overall, 75% have previous convictions of some kind, including 10% who have convictions for a previous sexual offence [Walmsley and White, 1979].

A principal problem in preventing rape has been the difficulty of eliminating the occurrence of situations in which rape usually occurs (when potential victims are alone after dark and in inner city areas), although measures have been taken to publicise these risk factors. Better home security has also been recommended, and changes in sentencing policy have been introduced, including increases in custodial sentences, limitations on parole for those who commit rape, and more severe penalties for attempted rape [Walmsley, 1986].

Armed Robbery

The incidence of armed robbery is increasing dramatically in Britain (incidence in 1984 doubled over the annual average for the years 1973-1980), and there appears to have been a move away from long-barrelled shotguns towards the use of more 'sawn-off' weapons and pistols. There has also been a trend towards more armed robberies of banks, cinemas, football grounds and clubs, and away from offences involving homes, offices, factories and shops [Criminal Statistics 1973-1984]. Regional differences appear marked, most offences occurring in London, and most offenders living in the capital - a large number of these participating in drug trafficking of some kind. Measures to combat armed robbery have included increased manpower levels in the Metropolitan Police Central Robbery Squad, increased surveillance of previous offenders, and recommendations have been made concerning availability, safety and storage of shotguns [Walmsley, 1986]. It is planned that shotgun owners will be compelled in the future to notify the police of any changes in their address.

Street Robbery (Mugging)

Robbery in the street is common, and greatly feared, particularly by the elderly population [Ramsay, 1982]. Mugging has been defined as

> " ... open, if usually brief, confrontations in the street between strangers, involving personal property, where there is a willingness to use force rather than stealth." [Ramsay, 1982]

Unfortunately, this offence is not categorised separately by all police forces, so that national incidence and trends are unknown, though the Metropolitan Police Force keeps records of "street robbery of personal property following a sudden attack", which demonstrate a 500% increase over the period 1974-1984. Assailants are usually males under 21 years, from the lower socio-economic groups, and living in

poorer areas. Assaults usually take place in these areas after dark. Weapons are used in only about 12% of cases.

As is the case with other types of inner city crime, the most promising avenue for control and prevention of street robbery seems to be adequate collection and analysis of data concerning location and timing of offences, so that police patrolling can be improved. Street-lighting has been improved in some locations, both to deter would-be assailants and also to reduce anxiety levels of pedestrians [Walmsley, 1986], though there seems to be little objective evidence that this is effective.

Unemployment and Violence

It is frequently assumed that there is an association between unemployment and violent crime, although, as with alcohol, a direct cause-and-effect relationship has been difficult to establish [Tarling, 1982]. From the theoretical viewpoint, it has been assumed that, if an unemployed person cannot earn wealth from his work, he is more likely to resort to crime. This is clearly an oversimplification when violence is considered, however, or any other crime not resulting in gain. Furthermore, most unemployed people do not resort to crime. In addition, it has been suggested that violence in the unemployed may relate to increased frustration, aggression, resentment or boredom, particularly when those in employment are seen as enjoying an increasingly high standard of living. The principal problem with this suggestion, however, is that these attitudes may also result from other types of deprivation, such as overcrowding, poverty and low educational attainment, and it is difficult to separate these factors. In addition, again as with alcohol, some other factor may be causing both unemployment and violent crime [Tarling, 1982].

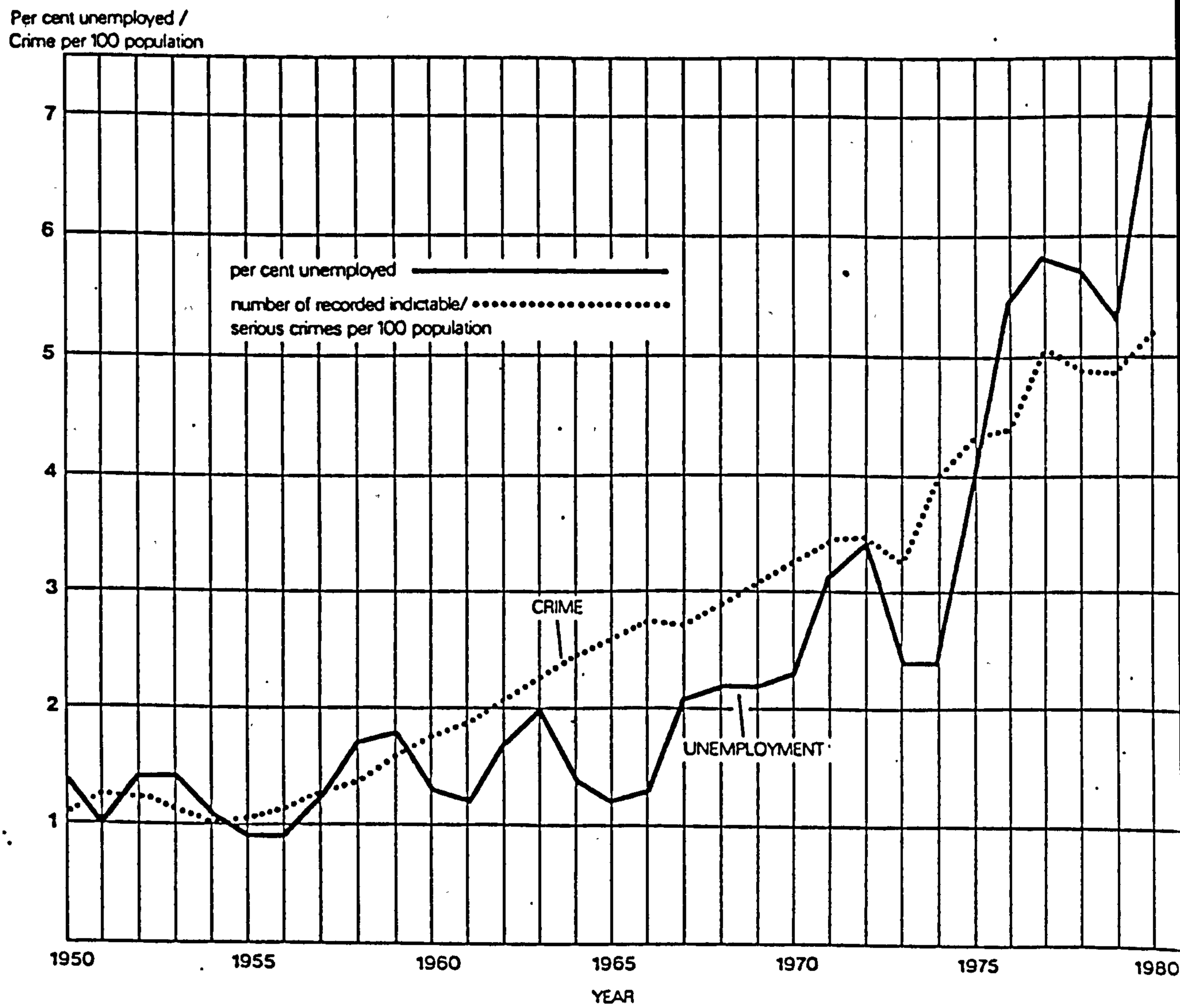
Empirical evidence for and against the association has come from studies of rates of unemployment and violence over the same periods [Gillespie, 1975; Braithwaite, 1978; ~~Dowser and Lamb, 1981~~] and, overall, there is more evidence suggesting no association [Tarling, 1982]. Investigation of this association in Britain involving the period 1915 to 1965 [McClintock and Avison, 1968] provides inconclusive evidence of an association, and during a more recent period (1950-1980), although overall association is strong, this is not statistically significant in individual 10-year periods (see Figure 1.2.4). A further problem is that obviously irrelevant factors, such as use of plastics and consumption of ice cream also correlate well with the crime rate over the same period. In a study carried out between the two world wars in Sheffield, Leeds, Birmingham and Liverpool, Mannheim [1940] states that

> "The only conclusion which can safely be drawn from our statistical material is that unemployment as a causative factor of crime seems to play a widely varying role in different districts. Whilst in some cases there is to be found an almost complete harmony between the fluctuations of unemployment and crime, in some others not even the slightest analogy exists."

The influence of other factors therefore seemed to be important and, when these were taken into account (e.g. age, social class and rateable value), little or no correlation between unemployment and crime was found [Carr-Hill and Stern, 1979]. There is also evidence that factors such as leisure time activity are even more important than unemployment *per se*, since those frequenting pubs, clubs, cinemas and other public places of recreation (all, incidentally, necessitating some expense) are more prone to personal violence [Sparks *et al*, 1977; Smith, 1982] than others. Further, and perhaps not surprisingly in view of this finding, skilled manual workers (rather than non-skilled

FIGURE 1.2.4: Source: Tarling (1982)

Unemployment rate and crime rate, in England and Wales, 1950–1980



manual workers and the unemployed) were most at risk of personal violence [Smith, 1982].

Since crime increases during periods of low unemployment, and yet many crimes are committed by the employed or those of school age, it is apparent that unemployment is not a major cause of violence. The consensus of opinion seems to be that, in association with other factors, it does contribute in some way to the cause of crime [Tarling, 1982]. Recent evidence confirms this view, with regard to the Cambridge Study in Delinquent Development, a longitudinal study of 411 London males followed from the age of 8 years. Crime rates were higher during periods of unemployment, particuarly in the 15-16 age group, the most 'delinquent-prone', and those with lower-status jobs. Nevertheless, this increase in crime involved offences of material gain only, the signficant association with unemployment not being observed in other types of offence (including personal violence) [Farrington et al, 1986].

Inner City Riots

In addition to the categories of personal violence outlined above, inner city rioting has also been a recent problem, particularly in St. Pauls (Bristol), Toxteth (Liverpool), Brixton (London) and Handsworth (Birmingham). The legal definition of a riot serves to describe some of the characteristics [Weller, 1985]:

1. The presence of three or more people.
2. A common unlawful purpose.
3. The inception or execution of that purpose.
4. An intent to help one another by force against those who might oppose.
5. A display of force or violence.

Historically, those taking part in riots do not appear to have been either criminals or psychiatrically ill [Rude, 1965]. There is evidence that a group of individuals will respond in an almost identical reflex fashion in the face of a particular stimulus, and this response is similar to that observed in various animal studies [Trotter, 1919; Groen, 1972]. Territorial threat or 'invasion' can be one of these stimuli, particularly if territory is overcrowded and community members depressed [Price, 1968; White, 1903; Wynne-Edwards, 1962]. Shows of strength and preliminary skirmishing are also characteristics of mob behaviour [Weller, 1985]. Humans are very sensitive to infringement of 'home territory', particularly in relation to housing clusters, gardens and street layouts [Whyte, 1961]. Strong cultural links [Toffler, 1970], the influence of community leaders [Cavali-Sforza and Feldman 1981], media publicity amplifying the problem areas, and friction [Cohen and Short, 1961] all make corporate violence more likely. In addition, the suggestion of a particular course of action to an individual when he is in a crowd is much more likely to be acted upon than would be the case if the suggestion had been made to that individual when he was alone [Deren, 1953]. Formal education seems to be a protective factor, but emotional instability, unfulfilled dependency needs [Eysenck, 1964], drugs and alcohol, all increase this suggestibility [Weller, 1985].

1.2.5 The Risk of Personal Violence

Before the publication of the BCS, there was little information available concerning risk of personal violence in particular situations. The BCS has suggested that the following factors are important [Gottfredson, 1984]:

1. Young people, males, those living in inner city areas, and sin-

gle people, have disproportionately high risks of suffering personal crimes (i.e. personal violence and theft from the person).

2. Those who stay in or around their home are least likely to be victims of personal crimes. For those who leave home to work, the use of public transport increases the risk of personal crimes.

3. Use of evening leisure time also appears important. Those who go out at night, particularly at the weekend, and particularly between 10.00pm and 2.00am, have a higher likelihood of becoming victims. This applies especially to those who visit inner city pubs, clubs and other public places of recreation.

4. Heavy drinkers, those with criminal records (particularly involving violent offences), and those who are 'accident-prone' are also at higher risk.

In addition to this, the results of the BCS also suggested that overall there was higher risk associated with unemployment and marital status (single, separated and divorced people being at greater risk), and risk of assault by a stranger was also highest for the single and employed. In contrast, those at most risk of violence from an acquaintance or relative were unemployed women and those in part-time work, separated or divorced men and particularly separated or divorced women [Hough and Mayhew, 1985].

Public awareness of personal violence is such that people tend to overestimate the risks, particularly of sexual offences, and especially rape [Walmsley, 1986]. The BCS demonstrated that 40% of young women (under 30 years) were 'very worried' about being raped by a stranger, and Hough and Mayhew [1985] point out that:

> "This does not necessarily mean that women are worrying about nothing. In general, one would expect rape to

> have a very serious impact on victims' lives, and there is nothing irrational in worrying about an occurrence which may be very unlikely to happen but is exceedingly distressing if it does."

This also applies to exaggerated fears about mugging.

Finally risk of the need to receive some sort of medical treatment following personal violence is estimated by the authors of the BCS [Hough and Mayhew, 1985] to be about 30% (i.e. 70% of victims of personal violence do not need medical treatment).

1.3 The Effects of Violence

1.3.1 Introduction

The effects of violence will be considered in three categories: physical, psycho-social and psychiatric. Most accounts of these effects deal with individual aspects, and this is not surprising in view of the widely disparate nature of the disciplines involved: forensic medicine is chiefly concerned with characteristics of injuries post-mortem, psychiatric illness usually develops some time after injury, and social problems are dealt with in the community. Exceptions to this generalisation include studies of sub-groups of victims, mainly battered children [Helfer and Kempe, 1968] and battered wives [Gayford, 1975], where a collaborative approach has been attempted.

Though this research is not directly concerned with child abuse, a review of personal violence would not be complete without consideration of this aspect. In addition to providing an example of a collaborative approach, child abuse research has demonstrated transmission of violence from generation to generation (p.58).

1.3.2 Physical Effects of Violence

The physical effects of trauma have been described extensively

in texts of neurosurgery, oral and maxillofacial surgery, general surgery, orthopaedic surgery and traumatology. In addition, forensic science deals with the relationship between injuries and the law, although nearly all forensic texts deal almost exclusively with post-mortem findings, and one [Gordon and Shapiro, 1975] starts with a definition and description of death and does not look back.

General Aspects

Any traumatic incident produces a physiological response in the injured victim [Perry, 1969]. The magnitude of the physiological response varies according to the extent of injury and, in the case of minor injuries, may be minimal. Physiological sequelae include [Moore, 1957]:

1. An initial reaction (2-5 days) characterised by endogenous corticosteroid production.
2. The catabolic period (2-5 weeks), characterised by protein synthesis.
3. An anabolic period (5 weeks-1 year), characterised by final adjustments and 'fat gain'.

Injury is followed by increased adrenal activity and secretion of adrenaline, noradrenoline and their metabolic products. The victim exhibits tachycardia, sweating and peripheral vasoconstriction, and will be pale and apprehensive. Corticosteroids are released, and urinary excretion of hydroxycorticosteroids usually trebles over the first 2-5 days, reaching a maximum at 6 hours [Perry, 1969]. Oxygen consumption and carbon dioxide production also increase, possibly secondary to increased thyroid hormone excretion.

Catabolism is increased following injury, demonstrated by increased urinary nitrogen excretion, rising to 15-20g daily if injury or post-injury infection is severe. Body weight usually falls off after injury, affecting skeletal muscle more than bone, connective tissue or

plasma proteins. Stabilisation of nitrogen metabolism is characteristically abrupt at the end of the initial phase, in the absence of complications, but protein replacement following injury may take many months even in the presence of adequate dietary protein and carbohydrate [Abbott et al, 1957; Shires et al, 1961].

The factors determining the nature and extent of wounds have been described as:

1. The nature of the object or instrument causing the wound (e.g. sharp, blunt, etc.).
2. The amount of energy expended during the impact (e.g. body weight in children and adults, velocity of projectiles).
3. The conditions under which the energy is expended (e.g. the extent to which the body can move (or deform) on impact).
4. The nature of the affected tissues (e.g. skin, muscles, bone).

[Gordon and Shapiro, 1975]

Thus, in an assault, a broken glass causes very different injuries from a fist (1), a glancing blow will cause less injury than direct impact (2), the head of a standing victim is able to 'recoil' in the face of a blow, whereas it will remain relatively stationary if lying on a pavement (3), and abdominal impact has different effects from facial impact (4). The fourth category is particularly important [Gordon and Shapiro, 1975]. Skin is elastic and is therefore resistant to traction forces, but provides only limited protection to underlying structures, and is liable to 'crush' injuries (e.g. scalp and skin over the tibia). Crush injuries particularly affect subcutaneous tissues, causing disruption to the delicate dermis, and bleeding. Muscles behave similarly, but are contained within fascial envelopes, which give some protection, and are attached to the skeleton which, if fractured, invariably gives rise to muscle damage. The skeleton has

surprising elastic properties, though these are age-related, children being less prone to fracture. Following maximal deformation (bending), the bone fractures at the point of greatest deformity. Force of impact may be transmitted through joints to distant sites (e.g. the clavicle in cases of falls where the upper limb is rigid) [Moritz, 1942; Wilson, 1946].

It has been shown that the mechanism of wound production is complex, and depends upon many factors, the effect of which are difficult to assess. For this reason, it is often impossible to know precisely, or give a categoric opinion concerning the amount of force required to produce a particular injury [Gordon and Shapiro, 1975].

Bruises (Including Contusions and Ecchymoses)

These wounds are characterised by effusion of blood into the tissues, and are usually caused by blunt trauma, although they may be associated with abrasions (frictional wounds affecting the epidermis). The extent of bruising depends on the site of injury, and in areas where loosely-arranged tissues are present, bruising may be extensive after relatively minor trauma (e.g. eyelids and neck). Bruising occurs more extensively in the obese and those with systemic bleeding disorders [Gordon and Shapiro, 1975].

Lacerations

An established classification of lacerations is set out in Table 1.5.2(a).

Loss of function and post-injury scarring will depend on wound orientation, extent of dermal collagen fibre division [Shepherd and Dawber, 1984] and skin loss [Allen et al, 1961], damage to underlying nerves, tendons and muscles and viscera, and genetic factors in the case of hypertrophic and keloid scars [Laurentaci and Dioguardi, 1977].

TABLE 1.5.2(a): General Features of Lacerations

Description of Wound	Incised	Lacerated	Punctured
Manner of production	sharp weapons	blunt weapons	pointed weapons (sharp or blunt)
Shape	linear	usually irregular	linear
Edges	clean cut/ everted	ragged/undermined	varies
Dimensions	long, gaping but superficial	varies	depth greater than length or width
Haemorrhage from wound	profuse	slight	depends on damage to deep vessels
Condition of surrounding wound edges	normal	bruising common	bruising rare

[Source: Gordon and Shapiro, 1975]

Fractures

Some general aspects of fractures are described above, and aetiology of maxillofacial injuries is described in Section 1.1. These injuries have also been categorised as epiphyseal, metaphyseal or diaphyseal, in relation to the long-bone affected, and also in terms of the plane of fracture (e.g. spiral, oblique, transverse). They may be simple (two fragments) or comminuted (more than two fragments) and open (communication with the skin or mucous membranes) or closed (no breach of overlying skin or mucosa). Fractures characteristically give rise to pain, swelling, deformity, ecchymosis, instability and crepitus [Hoagland, 1969].

Patterns of Injury

Though characteristics of injury caused by personal violence have been described in particular anatomical regions, notably concern-

ing skeletal and maxillofacial injuries (e.g. Van Hoof et al 1977; Neal et al 1978; Hill et al, 1984], few investigations have sought to elucidate overall injury patterns. Those that have been carried out have usually centred on particular groups of victims such as battered wives [Gayford, 1975] and battered children [Helfer and Kempe, 1968]. Gayford [1975], in a non-random sample of patients, reported a high incidence of facial wounding in battered wives, including circum-orbital haematomas, zygomatic complex fractures and also trunk, limb and scalp wounds. This preponderance of facial wounds has since been confirmed in a study of soft tissue injuries in consecutive female assault victims attending an accident and emergency department [Shepherd et al, 1987], although this study also showed that facial injuries in men were even more common. Overall, lacerations were uncommon in women compared with men, possibly supporting Gayford's suggestion that men tend to avoid the use of weapons which will leave obvious scars on their partners. Gayford [1975] attributed the high incidence of upper limb and shoulder injuries in battered wives to the unpremeditated use by men of blunt objects, particularly those available in the kitchen, to strike their wives, and the tendency of the victim to defend herself with the forearm. The forensic literature contains accounts of the nature of these individual wounds [e.g. Gordon and Shapiro, 1975], but little or no information on overall patterns.

In child abuse, extensive information is available concerning overall patterns of injury [Smith, 1975], the most characteristic feature being the pattern of bruising [Cameron, 1970]. Haematomas were present in the region of the upper labial frenulum in 50% of victims in one series [Cameron et al, 1966], and sub-galeal haematomas were also common. Sussman [1968] has described clustered haematomas affecting the trunk and buttocks and, to a lesser extent, the head and

proximal segments of the extremities. The presence of skin lesions of different ages confirms the repeated nature of physical abuse. Knowledge of this characteristic injury pattern is useful, in that it discriminates between abuse and accidental injury which usually in play affects the extremities. Because trauma is often directed at the trunk, the physical 'syndrome' often includes visceral injuries [Eisenstein et al, 1965] affecting liver, spleen, kidney and small bowel [Simpson, 1965; Touloukian, 1968; Gornall et al, 1972]. Eye injuries have also been described, including eyelid wounds [Woolley and Evans, 1955], peripheral choroiretinal atrophy [Maroteaux and Lamy, 1967], and retinal haemorrhages [Gilkes and Manu, 1967]. Sub-dural haematoma [Guthkelch, 1971] and growth failure have also been described. Burns appear to be infrequent [Smith, 1975]. Cameron [1970] has stated that

> "To the informed clinician, the bones tell a story the child is too young or too frightened to tell."

Epiphyseal fractures, exaggerated periosteal reactions and the multiplicity of lesions indicate repeated pulling and twisting of an infants' long bones [Silverman, 1968]. Caffey [1965] has rightly expressed caution concerning any diagnosis founded solely on radiographic findings, advice which pre-dates, of course, recent erroneous diagnoses of sexual abuse of children [Hamilton, 1987], which has been made purely on the basis of physical examination. A search of the literature reveals few descriptions of overall pattern of injuries in other forms of personal violence, particularly in the age groups found to be most at risk in the British Crime Survey and Police Criminal Statistics.

Long-Term Effects and Complications of Physical Injury

The above review of the physical manifestations of personal violence has dealt largely with site and the early features of injury,

and this is clearly of importance for recognition, management, and also for forensic reasons. It is nevertheless the long-term consequences of violence which will be of greater concern to the victim [Shapland et al, 1985]. There is some evidence that victims are more concerned after one year about physical injuries than they are in the early post-injury phase [Shapland et al, 1985]. Research to date, however, demonstrates a lack of collaboration in most medical, criminological and sociological investigations. Surgeons have tended to concentrate on physical aspects [e.g. Leopard, 1985], and criminologists have tended to describe the social and psychological effects of violence [e.g. Maguire and Corbett, 1987]. To illustrate the nature of complications and long-term physical effects of wounding (i.e. following any kind of trauma, not just assault), and in view of the evidence of a high incidence of facial injury in personal violence [Shepherd et al, 1987], the maxillofacial region will be briefly considered.

Superficial Wounds

Lacerations of the face, even after optimum treatment and healing, will always result in scars, and these will be noticeable unless hidden by hair or eyebrows, or concealed in natural skin creases [Evans et al, 1985]. Negroes and some whites can sometimes suffer unsightly or hypertrophic scarring which may not respond to scar revision or other treatment [Shepherd and Dawber, 1983]. This, of course, also applies to scars which follow surgical operations to reduce underlying fractures. In addition, lacerations involving the eyelids may give rise to ectropion, epiphora (if the lacrimal apparatus is damaged), or notching [Evans et al, 1985]. If the naso-ethmoidal complex is disrupted, traumatic telecanthus may be a feature [Tessier, 1973]. Injuries of nasal skin and cartilage may cause

asymmetry [Evans et al, 1985], notching of the alar margins, or restrictions in nasal air-flow. Labial injury is particularly noticeable if it affects the vermillion border, and scars may permanently interfere with function - for example, during speech, eating and playing wind instruments. Cosmetic and functional disabilities can sometimes be surgically corrected, but are often permanent.

The Teeth and Oral Mucosa

Dental injuries which cause tooth loss always have permanent effects. In the case of individual teeth, effects will be minimal and most amenable to prosthodontic measures, though prostheses, of course, require regular dental inspection and maintenance [L'Estrange and Pullen-Warner, 1974]. Loss of several teeth will permanently affect function, frequently not fully restorable by dentures. Occasionally there is malunion of jaw fractures, resulting in malocclusion [Leopard, 1985]. Enamel and dentine fractures amenable to restoration may not give rise to any long-term problems, but restorations will require replacement from time to time [McLean and Short, 1969]. If teeth are deprived of their blood supply at the time of trauma, or subsequently, then endodontic treatment may be indicated [Harty, 1974].

Loss of mucosa will result in reduction in sulcus depth, which may require further surgery prior to denture construction in the longer term [Leopard, 1985], and tongue mobility may occasionally be affected by scars after severe injury.

Muscle Injury

The facial muscles may be permanently affected if they are deprived of their motor nerve supply (see below), or if scarring extends deep to the overlying dermis. This may result in permanent partial functional loss. The muscles of mastication are rarely affected in the more minor injuries which follow assault, though mandibular

movements have been observed to be permanently limited after many condylar fractures, possibly due to muscle fibrosis [Wood, 198].

Injury to Nerves

Stretching, division and compression of the terminal branches of the trigeminal nerve are common during facial injury, and this gives rise to short- or long-term paraesthesia, anaesthesia or dysaesthesia, [Killey, 1971]. Supra-orbital, corneal, zygomatico-facial and zygomatico-temporal areas and scalp may be affected. Long-term, painful dysaesthesia is particularly common following zygomatic complex fractures [Crumley et al, 1977; Jungell and Lindqvist, 1987] due to bony compression or scarring in the infra-orbital area.

Motor disturbances and paralysis of the facial musculature are less common after facial injury, but lower motor-neurone damage commonly follows deep lacerations in the pre-auricular region, and may complicate condylar fractures [Taylor, 1967], particularly in children, in whom the mastoid process is incompletely formed [Kornblut, 1974]. Nerve damage may be corrected by microsurgery or grafting in the longer term [Hausamen et al, 1974].

Complications of Mandibular Fractures

Late complications include malunion, non-union, ankylosis [Norman, 1978] and temporo-mandibular joint disturbances [Leopard, 1985], although these are rare except in the elderly atrophic mandible, or where there is infection. They can give rise to considerable long-term disability and a further operation or operations are often required [Popescu and Vasiliu, 1977]. Mal-union and non-union give rise to occlusal derangement, and non-union is usually accompanied by painful fracture mobility. Facial deformity will almost certainly be a feature. Ankylosis gives rise to almost total restriction of mandibular movement and gross functional disability, while traumatic

derangement of the temporo-mandibular joint often leads to painful arthropathy and the need for long-term medication, intra-articular steroid injections or surgical intervention [Leopard, 1984].

Complications of Mid-face Fractures

Middle third fractures are rarely the result of personal violence [Hill, 1984]. Long-term residual problems include deformity, particularly of the nasal skeleton [Evans, 1985]. Even the most careful fracture reduction may give rise to some permanent alteration in appearance [Banks, 1984]. Mal-union of zygomatic fractures consistently causes deformity, and may be accompanied by limitation of mandibular movement arising through interference with the coronoid process [Rottke and Dunker, 1967]. This situation nearly always necessitates corrective surgery. Occasionally, sinusitis follows gross maxillary sinus disruption, and pins, plates, antral packs and intra-osseous wires used for fixation can become infected and cause long-term pain and discomfort [Leopard, 1975]. Disfiguring enophthalmos and disabling diplopia are other established complications of zygomatic fractures.

In addition to the complications outlined above, infection may become the source of further problems in the longer term, necessitating further surgical treatment or antibiotics. Also, assault may introduce foreign bodies, fragments of glass, road-grit, etc. into the tissues, causing long-term skin discolouration (tattooing), infection and the need for surgical intervention.

Clearly, then, even disregarding ophthalmic damage, the long-term effects of injury following violence even to one small anatomical area can be considerable, and this exemplifies that lack of consideration of physical effects is an important omission in many studies of assault. Surprisingly though, the medical literature does not appear

to contain any reports concerning the particular long-term physical problems experienced by assault victims.

1.3.3 Psycho-social Effects of Violence

The relationship between the various effects of personal violence was described in a pioneer study concerned with 278 victims known to the Criminal Justice System living in Coventry and Northampton, and appears to be the only such investigation reported in the literature [Shapland et al, 1985]. In this study, victims and relatives were asked about residual problems over a 2½-year period, and care was taken to eliminate experimenter effect (the tendency of a question to provoke a positive response). In this study, social and psychological effects included depression, lethargy and guilt, and were particularly pronounced and long-lasting where victims had been assaulted at work (bus drivers, shopkeepers and policemen), and where loss of earnings was a feature [Shapland et al, 1985]. Few of these victims actually changed employment, but inability to talk to customers was a common feature. Overall, nervousness, and anxiety were important psychological problems, and this often resulted in behavioural changes, including the avoidance of the area where the assault took place, and sometimes not venturing out-of-doors at all. Some victims also repeatedly imagined that they had subsequently seen the assailant in the street. Victims of sexual assault, however, experienced the most severe psychological and social effects, an unexpected finding being the tendency of the victim to ascribe to their own male relatives anger and distress, and to develop a deep-seated suspicion of other men.

The British Crime Survey, which included questions concerning the overall effects of crime, supports these findings [Hough and May-

hew, 1983]. 60% of those interviewed in depth said that they were "very much affected" by the violence. Maguire and Corbett [1987], however, in their study of 300 victims, found that 36% of those wounded (12% of "common assaults") were "very much affected" and 20% (42%) "not at all affected". Women (40%) were more severely affected than men (17%). These conflicting findings concerning the magnitude of overall effect are not isolated, and further studies contain assertions that

> "Past victimisations often do not seem memorable enough to be recalled for survey interviewers, and even those which are remembered are frequently trivial and of little import; they are part of life's vicissitudes, not ineffectively coped with by victims with help from family, friends and insurance premiums." [Mayhew, 1984]

but also that

> "The most common problems, affecting three-quarters of the sample ... were psychological problems, including fear, anxiety, nervousness, self-blame, anger, shame and difficulty sleeping ... We were stunned at the general impact of crime on the victims' psychological state, and at the alterations to daily life which were so often a part of the victimisation experience." [Friedman et al, 1982]

In relation to immediate psychological and behavioural changes, however, there appears to be more agreement. Anger, difficulty sleeping, uneasiness, confusion, fear, shivering, inability to perform ordinary tasks, 'weakness' and loss of interest were experienced "intensely" by more than 40% of victims of robbery or assault in one study [Maguire and Corbett, 1987], although these investigators appeared to have no knowledge of the physiological and metabolic effects which follow any kind of trauma (e.g. a surgical operation) [Perry, 1969] (see Section 1.3.2). Depression, helplessness, crying, loss of appetite, nausea and malaise were also features reported by 20–40% of victims. Most of these effects resolved during the first three weeks after assault but, in a minority, persisted to the extent that 15% of victims felt overall that they were still "very much" affected 3-6

weeks later, and 6% said, 3 weeks after the assault, that the event would have a "very strong" effect on the rest of their lives. These findings are supported by other workers [Waller, 1982; Mayhew, 1984]. Little or no research has been carried out to determine the longer-term (>3 months) effects of violence, though Shapland et al, [1985] found that a significant minority of victims suffered long-lasting fear, anxiety or depression. Other studies of victims of robbery and burglary, as well as assault, have found that most emotional problems had resolved by one year [Brown and Yantzi, 1980]; that most problems originally regarded as serious were no longer regarded as such [Friedman et al, 1982]; but that distrust of others (54% of victims) and fear of walking alone at night (33%) persisted long-term [Stuebing, 1984]. Friedman et al [1982] have described an initial 6-week "crisis stage", and the BCS tends to confirm this, and also to suggest that those still seriously affected at 3 months will continue to be so at 1 year [Hough and Mayhew, 1983]. Interestingly, there appears to be no mechanism to identify or compensate severely affected victims for their prolonged psychological suffering [Hartley, 1987].

Symonds [1975] described four stages in the psychological reaction to violence:

1. Shock and denial: These reactions occur both during, and immediately after, an offence.
2. Fright and fear: Some victims are paralysed by fear, and afterwards looks back on this inability to respond, with feelings of embarrassment and humiliation.
3. Apathy and anger: These reactions may alternate, and anger, inwardly directed, results in guilt and depression. Anger may also be directed towards the police, Courts or medical staff.
4. Resolution or repression of suffering: The time of onset of this

final stage is dependent on the duration of preceding stages, which in turn depends on the circumstances of violence, the victim's personality, mental state and earlier life experiences. Repression of suffering is thought to be the cause of persistence of symptoms [Hamilton, 1987]. It has been shown that the social effects of violence are intertwined with psychological effects, and sympathy shown to a victim, for example, which seems crucial for recovery [Hamilton, 1987], is often proportional to the perceived responsibility of the victim for the offence [Barkas, 1978]. For example, a victim stabbed in the street by a complete stranger may attract little sympathy because he/she will be blamed for being out alone at night in a dangerous area [Hamilton, 1987]. Society tends to believe that there is a rational reason for an attack. This is particularly the case with rape, the woman often being accused of having 'deserved it', or not to have actually been raped at all.

The transmission of violent behaviour from one generation to another is a further example of the long-term effects of violence, and in this regard a childhood victim often becomes an adult offender [Gayford, 1975]. Stressed children who have been battered may become repressed and psychologically disturbed, so that they are also unable to react normally to life's strains and stresses as adults. In addition, battered children inevitablyrespond to parental violence, becoming violent themselves, prone to tantrums and petty law-breaking, and this response appears to become incorporated into adult behaviour, resulting in violence in adulthood [Miller, 1983; Lewis et al, 1985; Hamilton, 1987].

1.3.4 The Psychiatric Effects of Violence

Psychiatric illness may arise from prolongation of any of the

four stages of reaction to violence already described (Section 1.3.3), although most studies of psychiatric morbidity have been confined to extreme or prolonged violence - for example, in disasters [Wilkinson, 1983], wartime [Ursano et al, 1981], or burns [Andreason et al, 1972]. As yet, there appears to have been only one attempt to screen victims of personal violence (robbery and assault) [Maguire and Corbett, 1987] and, in this study carried out 3-6 weeks after the offence and using the General Health Questionnaire [Goldberg et al, 1974], 18% of males (48% of females) were found to be suffering from some (unspecified) psychiatric disturbance. In comparison, 11% of males and 23% of females in a random sample of non-victims demonstrated abnormality. In contrast, psychiatric illness following rape has been well described [Norris et al, 1981].

The symptoms and signs of distress following physical violence have, in the past, been grouped together as "traumatic neurosis" or "traumatic psychoneurosis" [Adler, 1945]. However, many dispute the presence of a unique syndrome [e.g. Batchelor, 1978]. The reasons for this view are principally that the neuroses which follow trauma differ in no essential way from neuroses of other causes. However, despite this, the term "Post-Traumatic Stress Disorder" (in place of previous terms) has been described as a separate entity, and is a diagnosis which continues to be made, particularly in the United States [Andreason, 1985].

Post-Traumatic Stress Disorder (PTSD)

This term first appeared in the Diagnostic and Statistical Manual of Mental Disorders [American Psychiatric Association, 1980] and is now used to describe characteristic symptoms after any psychologically traumatic event (i.e. not just physical trauma). These characteristics included re-experiencing the event in the form of recollec-

tions or dreams, diminished responsiveness to or involvement with the external world, increased "startle response", loss of concentration, memory loss, guilt feelings and sleep difficulties [American Psychiatric Association, 1980]. It has been estimated that 80% of the survivors of the Buffalo Creek disaster and 60% of the survivors of the Coconut Grove disaster suffered from this 'syndrome' [Andreason, 1985]. The aetiology of the disorder is complex, but is concerned with the type and magnitude of the 'stressing event', age of victim, personality traits, previous psychiatric disability and availability of social support. Children and the elderly are less able to cope with traumatic events than other groups, and in two studies of burns, 80% of young children had symptoms of PTSD 1-2 years after injury, compared with only 30% of adults [Andreason et al, 1971; Andreason, 1985]. It is noticeable, however, in most descriptions of aetiological factors, that many presuppositions are evident, and the impression is given of efforts to shore up the validity of the disorder as a separate entity [Andreason, 1985], particularly by re-evaluating responses of victims of the Vietnam and Second World Wars [Archibald, 1962; Ursano et al, 1981]. Descriptions of PTSD seem, however, similar in many respects to descriptions of abnormal responses to loss and change (see Section 3.4.2).

The complications of PTSD have been described as destruction of inter-personal relationships, avoidance of situations resembling those in which the original trauma took place, drug or alcohol abuse, and attempted suicide [Andreason, 1985], and the disorder itself has been termed acute or chronic on the basis of persistence more than 6 months after trauma.

1.4 The Police, Victim Support Schemes and Compensation

Although the BCS demonstrates that only about 40% of incidents involving personal violence (and probably fewer in domestic cases) are recorded by the police [Hough and Mayhew, 1983], individual forces nevertheless play a key role with regard to victims.

1.4.1 Reporting of Personal Violence

Victimisation studies [Durant et al, 1972; Sparks et al, 1977; Shapland et al, 1985] reveal a number of reasons for reporting personal violence to the police. These include an instinctive reaction to do so following an attack; the fear that the assailant might assault someone else unless apprehended; a feeling that the offender ought not to be allowed to 'get away with it'; and because the victim felt that he/she needed help. Other reasons include the use by assailants of dangerous weapons or offensive language, and a feeling on the part of the victims that "these kinds of things shouldn't happen" [Shapland et al, 1985]. Interestingly, victims' perception of the fairness of the incident or assault seems to be an important factor, even in the case of domestic wife battering and inner city fighting among delinquents - implying the existence of (unwritten) rules. Conversely, reasons for not reporting incidents have included the perceived trivial nature of the incident; the feeling that the police could do nothing about it; or that it was a matter which could be satisfactorily dealt with by the victim at a later time [Hough and Mayhew, 1983]. Fear of the police; a belief that they would not be believed; and lack of time to visit a police station were other reasons.

Offences are reported by victims in about 40% of cases; by other people (witnesses, bystanders and friends) in about 50%, and in only

3-4% of cases do the police arrive spontaneously [Steer, 1980; Shapland, 1985].

Delays in reporting are variable, but the principal British research on this aspect found that 70% of offences were reported within 15 minutes. In the remaining 30% of cases, There were delays because the victim went to discuss this with family or friends, attended hospital for medical attention, or took no action until someone else persuaded them to report the offence [Shapland et al, 1985]. The BCS also provides evidence that reporting is more likely to occur when the victim is elderly or in a non-manual occupation.

1.4.2 Recording of Personal Violence

The BCS findings and Criminal Statistics, taken together, give the impression that the police do not record a significant number of incidents reported to them [Hough and Mayhew, 1983], but there are problems combining these data, stemming from sampling errors, and the tendency of a victim to tell a BCS interviewer that the offence had been reported when it had not been. Nevertheless, even given these difficulties, it appears likely [Hough and Mayhew, 1983] that more than 50% of reported incidents were not recorded. Reasons for this include the belief on the part of the police that the reported incident did not constitute a crime, that they had evidence that the 'victim' was partly to blame, or that they did not believe the victim. In addition, they may have decided, on the basis of later evidence, that a crime had not been committed ('no-crimed'), or the victim may have decided not to take further action, or that he/she was not prepared to give evidence. Unfortunately, practices vary widely between police forces, and over time, and there are therefore ample opportunities to suspect 'crime waves' simply through sporadic record-keeping.

1.4.3 Victim Support Schemes

The first Victims' Support Scheme was set up in Bristol, in 1973, in response to the practical and emotional needs of victims of burglary, particularly in the face of inadequate police resources to deal with victims' problems and give advice [Shapland, 1985]. Other schemes were soon established, leading to the need for a central administrative and coordinating body, the National Association of Victims' Support Schemes (NAVSS). Local schemes rely heavily on trained voluntary helpers, are managed by an executive committee with members mainly drawn from the police, legal profession and local authorities, and the work is supervised by one or two salaried local coordinators [Maguire and Corbett, 1987]. In early 1986, 133 coordinators and 57 deputy or assistant coordinators were receiving either full-time or part-time salaries or honoraria, at a total annual cost of £600,000. This cost is currently born by county councils, the Manpower Services Commission and Urban Aid, but central funding has recently been increased (by £9 million annually). Nevertheless, schemes still depend on their own fund-raising efforts, and new schemes rely on 'pump priming' grants from local industry [Maguire and Corbett, 1987].

Victims' Support Schemes, still at an early stage of development, have strong ties with local police forces, and the area served by a scheme nearly always corresponds with that covered by a police division, with most referrals emanating from one, or possibly two, police stations [Maguire and Corbett, 1987]. Of 133 schemes operating in 1986, only 4% "quite often" received referrals from sources other than the police.

Referral methods are usually of the 'blanket' type, where schemes are notified of all victims of a particular crime, whether or not the police have evidence that any help or advice is actually need-

ed, though some schemes operate a more selective system of referrals, asking for police notification only if victims request assistance of some kind. In addition, five schemes in 1986 restricted their service to the elderly [Maguire and Corbett, 1987]. Traditionally, burglary is the offence most associated with Support Schemes, and in 1986 numbers of victims of personal violence (wounding/assault) known to schemes was disproportionately low, compared with overall crime rates, even in terms of recorded crime (which, as has been seen, severely under-counts these offences [Crime Statistics 1970-1985; Hough and Mayhew, 1983; NAVSS, 1985]). The reason for this lack of contact with victims of violence is also thought to reflect the belief of the police that there is little place for 'non-professional' aid and advice for victims of serious offences such as wounding (particularly resulting from domestic violence), rape, robbery or attempted murder [Maguire and Corbett, 1986].

Once referral from the police has taken place, it is the practice of most schemes to initiate contact with the victim, usually by unannounced visit (57%), by letter (24%), or by telephone (17%), the remaining 2% of victims remaining uncontacted (1984 data) [Maguire and Corbett, 1986]. Previous studies have demonstrated, perhaps not surprisingly, that people do not take in and remember information about agencies (such as support schemes) unless they themselves currently need assistance [Riley and Mayhew, 1980; Shapland et al, 1985], and it therefore seems appropriate that schemes actively contact victims. The types of help and assistance offered by Victims' Support Schemes include emotional support (80% of one series of victims said that talking to a volunteer had helped [Maguire and Corbett, 1986]), and practical help, which usually involves contacting various agencies on behalf of victims (see Table 1.4.3).

1.4.4 Compensation and the Criminal Injury Compensation Board

Most oral and maxillofacial surgeons, as well as specialists in Accident and Emergency, Orthopaedic and Plastic Surgery, and those in general practice, complete reports concerning compensation in relation to physical injuries sustained by victims of personal violence, although there appears to have been no medical research carried out

TABLE 1.4.3: Agencies Most Frequently Contacted by Victims' Support Schemes on Behalf of Victims

Agency	Proportion of Schemes Mentioning Agency (%)
Social Services	78
DHSS	65
Housing Departments (repairs)	54
Gas/Electricity Boards	47
Crime Prevention Officers	46
Age Concern/other old people's agencies	42
Citizens Advice Bureaux	25
Insurance Companies	23
Criminal Injury Compensation Board	13
GP/Hospitals	12
Legal Advice Centres	9
TV/Video Rental Firms	4

[Source: Maguire and Corbett, 1987]

using such data, either emanating from the Courts or from the Criminal Injuries Compensation Board. At first sight, this seems a surprising omission, but may be related to the extensive existing knowledge of the nature and effects of various injuries (see Section 1.5). This is clearly an untapped source of forensic information concerning overall patterns of injury in various kinds of violence.

The payment of compensation is an important part of making amends for violence and settling violent disputes [Shapland et al, 1986], which has taken place for many years [Lenman and Parker, 1980].

The level of compensation has traditionally been based on severity of injury (e.g. "If the great toe be struck off, let twenty shillings be paid" [Edinburgh Review, 1884]), with little account being taken of the individual reaction of the victim. The idea of compensation from the State, however, as opposed to the assailant, is comparatively recent, being first introduced in New Zealand in 1963 [Shapland et al, 1986], and usually aims, on humanitarian and social welfare grounds, to compensate those who suffer hardship resulting from criminal violence [Miers, 1978; Burns, 1980; Thorvaldson and Krasnick, 1980; Harland, 1978]. The Criminal Injuries Compensation Board (CICB) was set up in Britain as a result of Home Office [1961] recommendations to demonstrate "social solidarity or the desire to express public sympathy for the victims of crime" [Home Office, 1978]. More cynically, Miers [1983] has suggested that most schemes (not just those in Britain) have been established for political reasons to satisfy the desire of the public to compensate victims.

The CICB receives far fewer applications for compensation than expected, from the incidence of recorded crime, and it appears that ignorance of this compensation scheme is the major reason [CICB, 1976; Genn, 1983]. However, only 30% of victims known to the Courts actually apply for compensation (where victims would presumably be aware of the provision for compensation) [Shapland et al, 1986]. Other reasons for not applying include a belief on the part of victims that they are ineligible or that the claim would be futile, while some are not sure how to apply [Vennard, 1976]. When victims do apply for compensation, the most frequently stated reason is reimbursement for medical (surprisingly) and dental bills, and cost of travel to doctors and hospitals (38%), replacement of damaged clothing and loss of earnings (24%). Victims also apply for compensation in relation to per-

manent scarring (18%), 'mental scarring', anxiety and inconvenience (16%), and other aspects (4%) [CICB 1972-1980; Shapland et al, 1986]. Very surprisingly, in view of the differences in systems of payment for health care, these data are similar to those from similar studies in the USA [Elias, 1983].

A few researchers have investigated the sources of information by which victims have been made aware of the CICB. Surprisingly, few if any victims seem to hear about the scheme from medical sources [Carrow, 1980; Elias, 1983; Shapland et al, 1986] (see Table 1.4.4).

Of those victims who do apply to the CICB there appears to be a high success rate, 81% of applications resulting in awards in 1979-1980 [CICB, 1980]. The mean time lapse between submitting a report and settlement was 9 months (range 124-734 days), delays mainly occurring because the medical situation was unclear, because of administrative reasons, and because there was a need to gather more information [CICB, 1980; Shapland, 1986]. In a study of victims of violence in 1979-80, 45 were awarded between £154 and £3,000 (mean = £611), but delays caused interim financial difficulties for some claimants [Shapland, 1986]. Overall, compensation may not be paid if the victim

> " ... is a person of violence or has been guilty of serious crimes of violence, or has persistently obtained his living by committing offences of dishonesty and, (controversially [Shapland, 1986]), has not made a serious attempt to earn an honest living." [Home Office, 1978]

With regard to emotional and psychiatric upset, compensation may be granted if this is mentioned by medical staff completing reports (though proformas do not ask specifically about non-physical aspects of injuries), or if the applicant reports this. Otherwise, compensation for pain and suffering is awarded as in a similar case in a civil Court, where an accident occurs as a result of an accident or negli-

gence [CICB, 1979; Hartley, 1987].

TABLE 1.4.4: Sources of Knowledge About the CICB

Source	Victims Knowing About the CICB (%)		
	Those Who Applied	Those Who Did Not Apply	Total
Police Officers on the case	29	5	34
Colleagues or friends who are policemen	5	13	18
Trades unions (including the Police Federation)	13	1	14
Friends	8	2	11
Citizens Advice Bureaux, Law Centres etc.	5	1	6
Newspapers, Magazines	2	2	4
Unknown	4	9	13
TOTAL	66	34	100

[Source: Shapland et al, 1986]

1.5 Alcohol and Its Relation to Violence

1.5.1 Introduction

Consideration of the effects, levels of consumption and abuse of alcohol appeared from the pilot study and previous research to be of crucial importance in any literature review concerning violence.

Alcoholic drinks consist mainly of ethyl alcohol and water, but contain various other substances peculiar to different varieties,

called congeners. The congeners, such as ethyl acetate, iso-amyl alcohol, various sugars, minerals and B-group vitamins are peculiar to different varieties of drink. They impart colour and flavour, but have few pharmacological actions [Rosalki, 1984]. Alcohol concentrations of various beverages are set out in Table 1.5.1.

TABLE 1.5.1: Ethanol Content of Various Alcoholic Beverages

Group	Examples	Alcohol Content (%:Volume/Volume)	Method of Production
beers	lager/ales/stouts	3–8	brewers wort fermented with yeast plus hops (flavouring)
table wines	still/sparkling	8–14	fermented grapes
dessert/ cocktail wines	sherry, port, madeira, vermouth	15–20	table wine plus high-proof spirits plus plant extracts (flavouring)
spirits	brandy, whisky, rum, gin, vodka	37–40	distilled grape, barley, molasses, berry or grain mash
liqueurs	Benedictine, Chartreuse, Kirsch	20–55	distilled neutral grain spirits plus flavouring

[Source: Royal College of Psychiatrists, 1986]

Alcohol consumption may be measured in terms of units; 1 unit being 1/6–1/4 gill of spirits (one single measure), 1/2 gill of dessert/ cocktail wine, one glass of table wine, 1/4 pint of strong beer or 1/2 pint beer [Royal College of Psychiatrists, 1986].

Rate of absorption from the gut is influenced by the concentration of alcohol (i.e. slower from beers than spirits), sugar concentration (retards resorption), carbon dioxide content (accelerates

absorption) and recent food intake (slows stomach emptying and absorption) [Hanagon et al, 1979]. In turn, these factors influence peak blood alcohol. There is considerable individual variation with regard to alcohol metabolism [Walls and Brownlie, 1970] but, broadly, one unit intake on an empty stomach results in a peak blood alcohol of 15mg/100ml in a man (30% higher in women due to differences in fat:water ratios). Thus, the ingestion, on an empty stomach, of 3 pints of beer by a man and two pints of beer in a woman will produce peak blood alcohol values >80mg/100ml - the legal limit for driving. Alcohol metabolism is constant at about 15mg/100ml/hour, but is faster in heavy drinkers [Royal College of Psychiatrists, 1986], since the metabolising enzymes in the liver have been stimulated.

1.5.2 Short-Term Effects of Alcohol

Circulatory effects include mild tachycardia and peripheral vasodilation resulting in heat loss, accentuated following excessive intake by central disturbances in temperature-regulation [Meldelson, 1970]. Gastro-intestinal effects, particularly of spirits, include gastritis and increased gastric acid secretion. Central effects depend on dosage and rate of rise in blood alcohol concentration, but alcohol is anxiolytic and euphoric when blood levels are about 50mg/100ml. As blood concentrations increase, so more brain functions are modified and depressed [Galbraith et al, 1976]. Emotional judgement is impaired at about 100mg/100ml, and increased confusion, stupor and death follow overdosage (fatal concentration is between 500-800mg/100ml). Driving skills are affected at about 30mg/100ml [Blennerhasset Report, 1976].

Feelings of heightened perception, relief of anxiety and stress, tranquility, especially in the elderly, lonely, sad, depressed, and

those in chronic pain, are well-known, but ethyl alcohol is nevertheless a central nervous system depressant [Victor and Adams, 1953]. It is disinhibition, not stimulation, which gives rise to loquacity, aggression and hyperactivity; added to which, preconceptions about alcohol-induced behaviour, immediate surroundings and cultural factors will also modify behaviour [Wallgren and Barry, 1970]. Thus, if a society attributes to alcohol only soporific, depressant properties, then these states will follow; but if another society mainly attributes to alcohol assertion and aggression, then these preconceptions will help drinkers to 'legitimise' violence. Disinhibition also releases suppressed feelings of aggression and hostility. Numerous investigations have associated intoxication with impulsive violence. Not only do people get involved in more arguments and accidents, but assaults are also more frequent [Wallgren and Barry, 1970]. In addition, even at low doses, ethanol is an excellent analgesic.

Though there is some conflicting evidence, most investigations into the effects of blood alcohol on reaction times demonstrate a detrimental effect above 30mg/100ml, but not consistently at lower concentrations. Greater complexity of task increases the adverse effects, and performance of speed tests, requiring sustained responses to complex stimuli, is most affected. Memory is also adversely affected, particularly regarding words and arithmetic ability - although, surprisingly, things learnt whilst intoxicated may be recalled more clearly during a later similar state than when sober. Progressive loss of judgement accompanies rising blood alcohol concentrations, though cold, exertion and pain make a drinker feel, erroneously, that he is back in control [Wallgren and Barry, 1970].

The interactions of ethanol with other drugs are well documented, and include potentiation of sedatives and tranquilisers [Bogan and

Smith, 1967], inhibition of anti-diabetic and anti-coagulant drug metabolism, and accelerated metabolism of drugs such as epanutin, when taken in high doses [Scully and Cawson, 1987].

1.5.3 Alcohol Dependence

Alcohol dependence comprises both psychological aspects involving

> " ... a feeling of satisfaction and a psychic drive that requires periodic or continuous administration to produce pleasure or to avoid discomfort",

and physical aspects including

> " ... an adaptive state that manifests itself by intense physical disturbance when administration is suspended." [World Health Organisation, 1955]

The influences which alcohol dependence has upon violent behaviour are both direct and indirect. The need for regular ingestion of ethanol gradually leads to alterations in priorities and timetabling, which involve work, domestic and leisure activities [Edwards and Cross, 1976]. Conflicts, particularly at home, may arise as a result of financial difficulties or an insistence on regular drinking elsewhere. In addition, withdrawal symptoms may include attacks of panic, and feelings of being tense, 'jittery' or 'on-edge', all of which may initiate violent behaviour [Gayford, 1975]. Secrecy, jealousy and deception may also precipitate arguments and violence ensue [Royal College of Psychiatrists, 1986]. Indirect influences include regular and prolonged visits to places of public recreation (public houses and clubs) which make exposure to violent situations more likely, even if the drinker does not initiate them. Dependence usually appears in middle age, though young people are increasingly affected, particularly those who are relatively immature or stressed for some reason. Life events - an accommodation move, divorce, bereavement or unemploy-

ment - may also bring about dependency [Hodgson et al, 1978; Heather et al, 1985].

1.5.4 Alcohol-Related Disabilities

Social Disabilities

The impact of alcohol on marriage is an example of its adverse social effects in excess. One survey of alcoholics strongly suggested that alcohol was a cause for divorce in 30% of respondents [Orford and Harwin, 1982], and half of the battering husbands in one series were considered by their wives to be alcoholic [Gayford, 1975]. As has been discussed, the involvement of alcohol in violence is far different from the concept of direct cause and effect. In marriage, excessive intake may first cause minor stresses and uncertainties, and the spouse may develop an ability to hide the problem, and even retrain and increase earning simply to prevent financial stresses from becoming obvious and causing family breakdown. Increasingly, though, the drain on family resources, and other stresses, lead the wife of an alcoholic to social isolation and depression. Unfortunately, the literature reveals cases where attempted suicide [Thompson, 1956], attempted murder (of the drinking husband), or murder are the first outward signs of an alcohol problem, although of course battered wives may attend hospital [Orford and Harwin, 1982]. If it is the woman who is drinking excessively, then the husband's anger may turn to violence, and it will often be easier for the husband to leave the wife than vice versa [Royal College of Psychiatrists, 1986]. Clearly, in either situation, children will be exposed to increased arguments, fighting between parents (mostly victimisation of the mother) and emotional or physical abuse including, in extreme cases, incest [Virkkunen, 1974]. The effects on the children may include neurosis,

behavioural problems, delinquency and the likelihood that violence will be transmitted to the next generation [Gayford, 1975]. It is thought that the psychological damage, particularly that done to a girl who is torn between love and hatred for a drunken and unpredictable father, can be devastating [Orford and Harwin, 1982].

As has been discussed, the relationship between alcohol and crime emphasises the need to consider causal 'systems', rather than single causes, although misleadingly the offence "drunk and incapable in a public place", for example, implies that alcohol is a sole reason for offending. In fact, there may be a host of causal factors, interacting in a complex way to bring about an eventual offence. The destitute are typical in this regard [Archard, 1979]. Many are eccentrics, schizophrenics, have multiple handicaps, and are young, single and unemployed, as well as heavy drinkers. In addition, in a London survey, the Irish and Scottish were over-represented, most came from broken homes,were particularly disease-prone (mainly to chronic chest infections), and had a short life expectancy [Lint and Levinson, 1975]. At the opposite end of the socio-economic spectrum, the literature provides evidence that fraud (often perpetrated by accountants) is closely associated with the monetary demands of excessive drinking in white-collar workers [Hore and Plant, 1981].

Alcohol is also associated with violence towards accident and emergency staff [Lion et al, 1969; Gosnold, 1978], 70% of assailants in one series of incidents being intoxicated; and in studies of both victims and assailants in cases of personal violence including assault, rape, burglary and murder, a high incidence of intoxication has been found [Collins, 1982; Light, 1986]. Recent alcohol intake has been reported in 50% of women and 80% of men with head injuries caused by assault in Glasgow [Galbraith et al, 1976] and in 43% of

assault victims attending two Danish hospitals [Hedeboe et al, 1985].

Psychological Disabilities

Proneness to involvement in violence, as victim or offender, may depend to some extent on the mood-changes induced by excessive alcohol - misery, depression, gloom and suspicion. Not surprisingly, suicide is 50 times more likely in those dependent on alcohol than in the general population [Kessel and Grossman, 1961; Royal College of Psychiatrists, 1986]. The deterioration in behaviour of a heavy drinker, towards friends, colleagues, employers and neighbours, gradually exhausts the drinker's 'credit' and eventually destroys his or her reputation [Hore, 1976]. Temporary or permanent impairment of intelligence, memory and judgement are also factors.

Physical Disabilities

The association between alcohol and disease is well established, particularly in relation to dietary deficiency [Cade, 1972], liver disease [Sherlock, 1982], pancreatitis [Wintrobe et al, 1974], myopathy [Brigden and Robinson, 1964] (the evidence concerning protective properties in relation to coronary artery disease seems equivocal), hypertension and cerebellar cortical degeneration [Victor et al, 1959]. In addition, mortality from accidents [Denney, 1979], neoplasia and cerebro-vascular accidents are higher in regular drinkers, and specific central nervous system disorders have been described, secondary to thiamine deficiency - principally Wernicke's encephalopathy [Victor et al, 1974] and Korsakoff's psychosis [Cutting, 1978]. Alcohol has been found to be a direct or contributory factor in 27% of acute general medical admissions to hospital [Jariwalla et al, 1979] and 10% of a series of 1,000 consecutive patients admitted to one hospital were found to be suffering from alcoholism [Green, 1965].

It has been estimated that the total costs of alcohol misuse in England and Wales in 1983 amounted to £89.2 million (traffic accidents), £32.2 million (criminal activity), £95.9 million (NHS costs) and £1396.8 million (industry) [McDonnel and Maynard, 1985]. Similar calculations relate to alcoholism in the USA [Wartis and Pfeffer, 1950].

1.5.5 Choice and Personal Responsibility

Recent health education material has emphasised the responsibility of the individual in relation to alcohol consumption [e.g. Royal College of Psychiatrists, 1986]. There is evidence that weekly consumption in excess of 50 units (400g ethanol) by men and 35 units (280g ethanol) by women greatly increases the potential for harmful consequences [Robertson and Heather, 1986], though 'binge drinking' involving consumption of, say, half this amount will clearly have deleterious consequences in terms of intoxication and accident-proneness. The Health Education Council [HEC, 1984] and the results of a survey of general medical practitioners [Wallace et al, 1985] indicate a widespread view, however, that consumption should be considerably less than this [General Practitioner recommendations: <34 units (men), <20 units (women); HEC recommendations: <21 units (men), <14 units (women)). Interestingly, none of these groups have set out guidelines for individual drinking sessions, published advice being more concerned with education about the nature and duration of typical behavioural changes and financial effects following intake of various amounts of alcohol, and about other drinking habits (e.g. during pregnancy). For example, the Royal College of Psychiatrists [1986] recently published the following guidelines:

1. Don't drink every day of the week - try to introduce two or

three alcohol-free days. This gives the body a chance to recover.

2. Don't use alcohol as a means of helping you to cope with emotional problems.
3. Don't drink alone.
4. Don't use alcohol as a night-cap to help you sleep. You will quickly become tolerant of this regular dose and then find that you have to increase it to obtain a satisfactory result.
5. Don't drink alcohol while taking other drugs, either prescribed or 'over-the-counter'.
6. Don't drink on an empty stomach. Try to have something to eat while you are drinking. This delays absorption of alcohol.
7. If you are participating in a drinking session, try to introduce a non-alcoholic drink into your drinking sequence. It is often a good idea to quench thirst first with a non-alcoholic drink.
8. Always put your glass down between sips and try to pace your drinking so that you become one of the slower drinkers in company.
9. Sip, don't gulp drinks.
10. If you drink spirits, always dilute them.

Health education agencies have also emphasised the help which organisations such as Alcohol Concern, Action on Alcohol Abuse, Alcoholics Anonymous and Women's Alcohol Centre can offer to individuals [Stuart, 1986], and it is hoped that this publicity will be as (or more) effective than similar material relating to smoking [Wallace et al, 1985].

Mean weekly alcohol consumption by male drinkers in England and Wales in 1980 (20 units) was approximately equal to the upper limit proposed by the Health Education Council (21 units) [Health Education

Council, 1984; OPCS, 1980], clearly demonstrating that many were exceeding this limit - including most younger drinkers [Grant, 1984]. In women, however, mean weekly consumption was 7 units - about half the recommended limit. There were Regional differences, however, mean consumption of men in the North being 30% higher than average (10% lower in women) and mean consumption of women in Inner London, the West Midlands and Wales was 25% higher than average (equal to the national average in men). In addition, men drank on an average of 5 (Regional variation 3.3-5.5 units) separate occasions weekly (women on 3 occasions - Regional variation 2.2-4.5 units). Mean consumption by males per occasion was 4 units (Regional variation 3-5 units) and by women, 2 units (Regional variation 1.7-2.8 units) [Wilson, 1980]. Social and economic factors play an important role in this area, however. Age (particularly in the 18-25 and >65 age groups), marital status and type of employment are important factors in consumption, and habits are frequently transmitted from generation to generation. Peer group pressures also strongly influence consumption [Chick and Chick, 1984].

CHAPTER 2

AIMS OF THIS STUDY

The first objective of this study was to determine the nature, severity and overall pattern of physical injuries sustained by victims of assault attending an inner city Accident and Emergency Department, and to relate these injuries to the nature of the assault, and to characteristics of the victims. A number of hypotheses were tested, principally that most injuries in assault affect the face, that female victims demonstrate a characteristic wound pattern, and that victims who fall during an assault sustain more severe injury.

The second object of the study was to provide information to supplement the findings of the British Crime Survey (BCS) and Police Crime Statistics, with reference to personal violence within a well-defined inner city suburban hospital catchment area. In this regard, the study was designed to determine demographic and socio-economic characteristics of victims, and also previous experience of violence; to test the hypotheses that young males are most frequently involved; that most violence takes place in or near inner city pubs and clubs late at night; that unemployment and other deprivation are important predisposing factors in victimisation; and that domestic violence is under-counted both in the BCS and Crime Statistics.

Further objectives of the study were to determine recent and habitual alcohol intake and alcohol-induced liver damage in victims; the extent of police involvement; characteristics of assailant(s); and the nature of the violence. It was envisaged that the research would result in data of use to patients concerning the avoidance of future

violence and alcohol intake, and to the police concerning surveillance of inner city areas.

A final objective was to determine the psychiatric and social effects of violence, by testing hypotheses that victims of assault are more severely disturbed than victims of road accidents and falls, and that they experience a loss of self-respect which leads to a typical 'mourning' process, followed by slow readjustment.

CHAPTER 3

METHODS AND PATIENTS

3.1 Questionnaire Design

Information concerning the chacteristics of victims and the circumstances and background of the assault was collected by means of questionnaires, completed by the author and by trained interviewers either in the Accident and Emergency Department of the Bristol Royal Infirmary when the patient first attended, or as soon as possible thereafter (some patients were unconscious or heavily intoxicated initially). An example of the questionnaire is given in Appendix 1.

Information relating to demographic and socio-economic factors was recorded, and also details of the assault, assailant(s), previous assault(s), victims' alcohol consumption, injuries and treatment provided. Date and time of interview and name of interviewer were recorded to permit the time lapse between assault and blood sampling to be calculated, and also to permit later checking of recorded data with interviewers.

3.1.1 Demography

The patient's name was recorded since, although confidentiality was important (see Section 3.1.6), and no patients' names were included in the computer data base, it was necessary to know victims' identity in order to cross-reference police records of offences giving rise to 'wounding', to check electoral ward of residence, and to contact victims for follow-up interviews.

Address was recorded, principally to allow classification in terms of electoral ward, but also to allow identification of particu-

lar localities where many patients lived, and correspondence for later interviews. Telephone numbers were recorded, so that patients could be contacted to collect any information previously missed, or to arrange follow-up interviews.

Date of birth was recorded to enable analysis of data relating to various age cohorts, and gender to allow any differences to be identified and for evaluation of laboratory findings - for example, with reference to gamma-glutamyl transferase levels (normal range: males 8-67 IU/L, females 6-32 IU/L [Bernadt et al, 1982]).

Racial background was recorded as white, black, India/Pakistan or 'other', in order to relate racial characteristics with those of assailants and with characteristics included in the 1981 census [OPCS, 1982].

In this regard, place of birth was also recorded, because information collected in the 1981 census relating to race was recorded under 'birthplace of head of household'.

Marital status was recorded because previous research had demonstrated a susceptibility to illness and accident reduced in married people compared with the single, divorced and separated, and because the BCS found that the single, widowed and divorced were particularly at risk of assault [Hough and Mayhew, 1983]. In the case of domestic violence, it was thought in this study that there might be a correlation between duration of marriage and onset of violence [Gayford, 1975], and date of marriage was therefore included.

3.1.2 Socio-economic Factors

Occupation of victim was recorded, or, if the victim was not working, occupation of spouse; employment status was recorded - to allow categorisation of occupation in terms of the Registrar General's

classification of Social Class and Socio-economic Group [OPCS, 1980]. Weekly net income was recorded, both to allow cross-checking of socio-economic group, and to allow estimation of the proportion of income spent on alcohol. Recent research in Bristol, by other groups, has provided information concerning relative material and social deprivation in the various electoral wards [Townsend et al, 1984], and ward of residence was therefore also used as a socio-economic indicator.

3.1.3 Circumstances of the Assault

Date, time and precise place of assault were recorded, to allow comparison with BCS and local police data concerning 'woundings'. By recording geographical location of assault it was possible to determine electoral ward, and thus to calculate an assault rate for each ward. This seemed particularly important in the light of previous criminological surveys, one of which suggested that such rates were in themselves sensitive indicators of social deprivation [Smith, 1985].

The reason for assault was also recorded, to allow identification of particular types of assault (e.g. intervention in an existing brawl leading to injury, 'mugging', etc.), and to provide data which could test the assertion that most victims deny responsibility or fail to give reasons for an assault. To supplement this information, patients were also asked about their activity at the time of the assault (drinking, walking, running, etc.), particularly to try to identify 'risk' activities. Recording of the time of assault also allowed calculation of the time lapse between assault and blood testing, to more accurately estimate blood alcohol at the time of assault [Walls and Brownlie, 1985].

Details of number of blows sustained, whether the victim fell over during the assault, and number of blows sustained after such a

fall were also recorded, along with details of any weapon(s) used. Patients were also asked whether they sustained the injuries subsequently requiring medical treatment before or after a fall. These details were clearly important to match nature of injury with cause, severity of injury and number of 'impacts'.

Patients were asked about their assailants, and particularly about the extent of a pre-existing relationship. To clarify this, patients were asked the name of the assailant(s), their occupation, and the duration of the relationship. It was envisaged that these details would clarify the nature of victim/assailant relationships, particularly in domestic violence.

Previous clinical experience suggested that 'bouncers' might be responsible for an inordinate amount of violence in Central Bristol, and patients were therefore asked whether they had been assaulted by a 'bouncer'. In addition, numbers, apparent ages and racial background of assailants were recorded to allow comparison with BCS data which suggested that assailants and victims had much in common (though, in fact, the BCS did not examine racial aspects of violence [Hough and Mayhew, 1983]).

Patients were asked whether the police knew about the assault, or, if not, whether they planned to inform the police. One of the established reasons for not reporting personal violence is the need for medical treatment [Maguire and Corbett, 1987], and, by definition, those with most severe injuries will need medical treatment most urgently. These questions were designed to identify what proportion of offences appeared to be undetected by the police.

Recent alcohol intake (in the 12 hours immediately preceding the assault), and habitual weekly alcohol intake were recorded in terms of units, using the guidelines described by Murray [1978] and adopted by

the Royal College of Psychiatrists [1986], 1 unit being half a pint of beer or lager, one single measure of spirits, one glass of wine or one glass of sherry. This allowed comparison with recommended 'safe' alcohol intake [Bernadt et al, 1982; Royal College of Psychiatrists, 1986], and correlation with blood alcohol levels [Walls and Brownlie, 1985].

History of previous assault was determined by asking patients to indicate how many assaults they had experienced since the age of 11 (to exclude childhood fights and scuffles). There appears to be no indication in the literature of typical 'violence experience' in the general population, or in assault victims known to medical services or the Criminal Justice System, and these data were therefore useful to establish typical experience and to allow comparison of those to whom violence was familiar and those experiencing violence for the first time. A further reason to record details of previous assault was that repeated violence has been found to be a good indicator of alcohol abuse [Skinner et al, 1986], and, with details of habitual intake and laboratory tests, this information was used to identify abusers more accurately.

3.1.4 Injuries

Injuries were recorded on a pro forma similar to that recommended by Gordon and Shapiro [1975] for forensic purposes (Appendix 1). Haematomas (including abrasions) and lacerations were marked, and fractures were listed separately. This allowed counting of injuries, assessment of overall injury pattern and categorisation of injuries as thoracic, abdominal, lower limb, upper limb, face, and other head and neck.

3.1.5 Treatment

To allow calculation of the demands on medical services posed by assault victims, details of treatment were recorded, principally the need for admission to hospital. The need for admission to hospital was also used to evaluate a new injury severity index (see below).

3.1.6 Blood Alcohol and Serum Gamma-glutamyl Transferase

Permission was obtained from the Bristol and Weston District Health Authority Ethical Committee to obtain blood samples from patients, provided that the purpose of investigation was explained, and provided that patients gave verbal consent.

A sample of venous blood was obtained from the ante-cubital fossa in the standard fashion from consenting patients for estimation of blood alcohol and levels of gamma-glutamyl transferase (γ-GT). The only standard practice not adopted was the preparation of the skin with an antiseptic solution of 5% isopropyl alcohol, which was thought might contaminate samples, giving rise to false ethanol readings (but see page 95). 10ml of blood was obtained from each patient. 5ml was stored in a container with 5mg sodium fluoride, (an alcohol dehydrogenase inhibitor, which prevents ethanol breakdown) and 20mg potassium oxalate (anticoagulant). The other 5ml was stored in a plain container for γ-GT analysis. Containers were stored at $4^{o}C$ until transport to the laboratory for testing (12-24 hours after sampling).

These methods of determining excessive alcohol intake were adopted because previous research had demonstrated the usefulness of the hepatic enzyme serum gamma-glutamyl transferase (γ-GT) as a marker of alcohol consumption and abuse [Whitehead et al, 1978; Whitfield et al, 1978; Kristensen et al, 1980], particularly when combined with basic clinical information concerned with weekly intake [Skinner et al,

1981] and other factors, such as repeated assault [Skinner et al, 1986]. Though γ-GT levels may be raised because of non-alcohol-related hepatic disease, most patients in this study were expected to be young males under 30 years of age, when these complicating factors would be rare [Whitehead et al, 1978].

3.2 Patients

All assault victims attending the Accident and Emergency Department of the Bristol Royal Infirmary between 5.00pm on 14th December 1985 and 5.00pm on 14th December 1986 were interviewed and examined. Before beginning data collection, medical receptionists who register all patients attending the Accident and Emergency Department were instructed to contact resident Oral Surgery staff when an assault victim attended. Casualty officers were also informed of the study, and of the necessity that all victims be included during the forthcoming year. Oral Surgery staff were resident throughout the 12 months for the principal purpose of treating patients with facial and jaw injuries and dental pain. In addition, for 46 of the 52 weeks, three dental students were also resident for the purpose of learning primary care techniques such as suturing. All these staff and students were taught to complete the questionnaire (in the case of students, by means of weekly meetings) in a standardised manner, particularly in relation to units of alcohol consumption, racial characteristics, charting of injuries, and blood sampling and storage. It was envisaged that most patients would attend late at night, so that the role of these resident staff was especially important [Hough and Mayhew, 1983; Shepherd et al, 1987]. In addition, the author attended the Accident and Emergency Department on most Friday evenings until

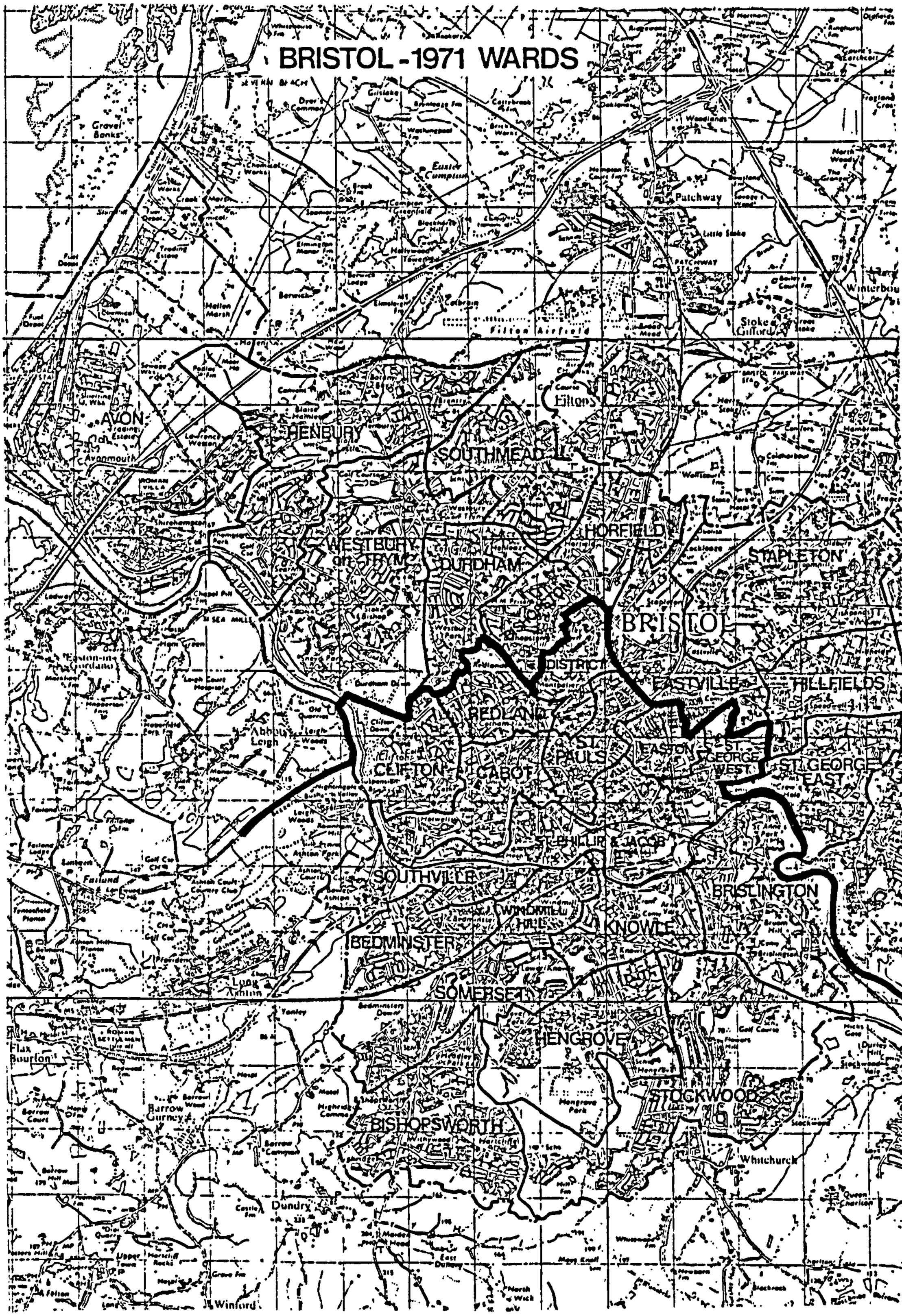
2.00am, and often during the daytime. To ensure that all patients were included, departmental record cards and registers were scrutinised weekly, and available details transferred to questionnaires in the case of any patients previously missed. Local newspapers were scrutinised on a weekly basis to find reference to cases of assault resulting in wounding, so that Accident and Emergency Department records could be cross-checked. Only patients attending the Bristol Royal Infirmary were included in the study because the hospital had a well-defined catchment area (Central and South Bristol, see Figure 3.2) served by no other Accident and Emergency Department. The exception to this was the Casualty Department at the Bristol Hospital for Sick Children, where children under the age of 12 years mainly attended. Owing to the unique characteristics and circumstances of child abuse evident from the literature review, the well-documented effects (physical, psycho-social and psychiatric), and the absence of any information in the BCS concerning child abuse, it was decided that there was little to be gained from studying this unique group of patients - and victims attending this hospital were therefore not included.

3.3 Data Analysis and Laboratory Procedures

3.3.1 Demography, Socio-economic Group and Racial Characteristics

Questionnaires were assigned study numbers, thus preserving patient anonymity in subsequent compiling of the computer data base. Patients' address and location of the assault were entered onto a road map of Bristol [Geographers A-Z Map Co. Ltd., Sevenoaks], upon which were traced 1981 electoral ward boundaries (Figure 3.2). Care was taken to record these locations accurately, particularly where ward

FIGURE 3.2: 1971 Electoral Ward Boundaries. Wards South of continuous line are contained in the Bristol and Weston District Health Authority



boundaries passed along a road where a patient resided. Where doubt existed the police were contacted, though advice was rarely needed because the map chosen showed house numbers in major streets. Electoral ward, both of patients' residence and of location of the violence, was then entered into the computer data base (see Section 3.3.9). Although most patients resided within City of Bristol boundaries, some lived outside the city, and were designated 'outside Bristol'. Similarly, a few assaults took place outside the city. These data were compared with 1981 census data [OPCS, 1982] in respect of 1981 ward boundaries (28 wards) with particular reference to unemployment [City of Bristol Planning Department, 1986], social and material deprivation (car ownership, number of children receiving free school meals, households with fewer rooms than persons, households with electricity disconnected [Townsend et al, 1984]), social class and socio-economic group [OPCS, 1980]. It was important to relate data with 1981 census data because major ward boundary alterations were made in 1982, involving the formation of 34 new wards [City of Bristol Planning Department, 1983]. Previous research concerning deprivation within the city had been based on 1981 boundaries [Townsend et al, 1984], so that comparison of data relating to new boundaries with existing data would have been meaningless. In relation to unemployment data, however, this was not of concern, because City of Bristol rates were still being calculated in terms of 1981 ward boundaries.

Racial characteristics of victims and assailants were compared with those of the population of Bristol, presented in the 1981 census (categorised by birthplace of head of household - see above).

3.3.2 Background of Assault

Perceived reasons for assault were grouped into 17 categories (Table 3.3.2). Time and date of assault were categorised by hour of day (beginning at 9.00am), day of week and month of year [Shepherd et al, 1987].

TABLE 3.3.2: Background of Assault

Category	Comments
1. Road traffic dispute	All violence following collisions and disputes whilst victims or assailant was driving or a passenger.
2. Revenge	Planned violence in response to a previous event.
3. Retaliation	Spontaneous violence following physical contact.
4. Domestic argument	Violence following an argument at the home of assailant or victim.
5. Argument elsewhere	Violence following arguments other than those in categories 1, 4, 11, 12 and 13.
6. Response to insult	Spontaneous violence following specific insult.
7. Assailant intoxicated	Violence solely attributed by victim to intoxication.
8. Assailant bored	Violence attributed by victim to boredom.
9. Patient obstructed assailant	Violence following obstruction of the assailant.
10. Assailant obstructed patient	Violence following obstruction of the patient.
11. Football hooliganism	Violence inside or associated with a football ground, or involving disputes between football supporters.

TABLE 3.3.2 continued

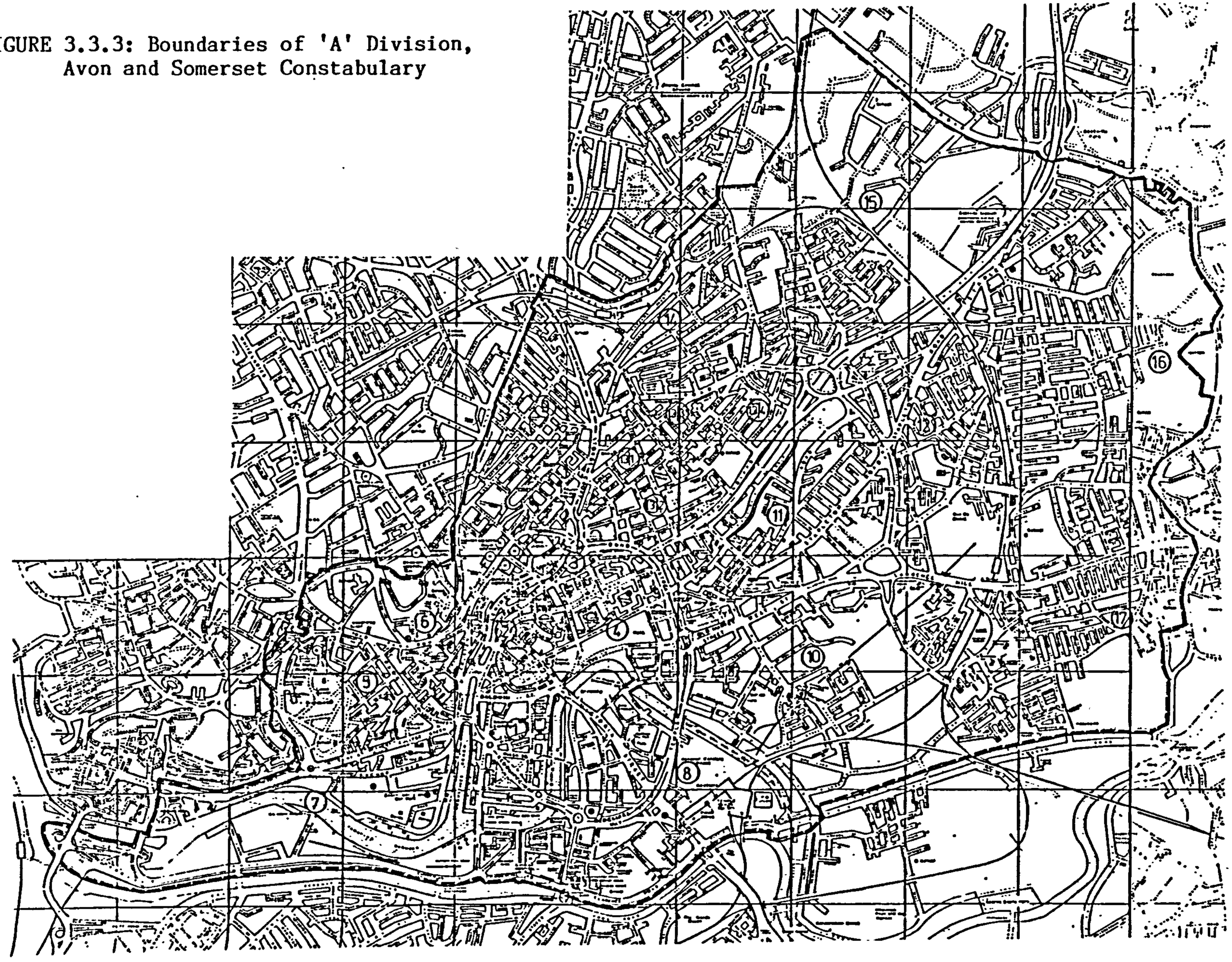
12. Fights over females/males	Violence as part of a dispute about a third party (female or male).
13. Intervention in existing altercation	Injury following intervention in an existing argument/fight.
14. Racially-motivated violence	Violence attributed to racial factors.
15. Robbery (including mugging)	Violence during attempts to take money/possessions.
16. Mistaken identity	Violence mistakenly directed against victim.
17. Unknown	Background to violence not known/ divulged.

Place of assault was categorised as pub, club, street, private home, workplace, public transport, sports ground, cinema, shop, school/college, restaurant, park, hotel, hospital, car/car park or police station, and other locations of assault listed as the study progressed.

3.3.3 Police Records

For the purpose of matching patients' names with those appearing in police lists of woundings, an index of patients' names and addresses and study numbers was compiled. Offences giving rise to 'wounding' (including attempted murder and grievous and actual bodily harm) were listed by 'A' Division of the Avon and Somerset Constabulary separately from other offences, and totals were available, with details of name of victim, category of offence and geographical location of offence. 'A' Division covers an area of Central Bristol corresponding to the electoral wards of Cabot, St. Pauls, Easton and St. Phillip and St. Jacob, where most assaults took place (Figure 3.3.3). Lists of 'woundings' were only available for this Division, and therefore no

FIGURE 3.3.3: Boundaries of 'A' Division,
Avon and Somerset Constabulary



attempts were made to search the records of other divisions, either within or outside city boundaries. Notwithstanding this, 'A' Division records were searched for names of all patients, and vice versa.

3.3.4 Alcohol Consumption

Weekly alcohol consumption of victims was compared with recommended maximum intake [Health Education Council, 1984; Breeze, 1985; Wallace et al, 1985; Royal College of Psychiatrists, 1986] after checking stated intake against blood alcohol levels at the time of interview and 30 minutes after assault (assuming mean alcohol metabolism of 15mg/100ml blood/hour [Walls and Brownlie, 1985]). A precise calculation of intake based on blood level was not possible, given individual variation, effect of food intake and continuing absorption possibly until 30 minutes after the assault (assuming no further intake afterwards). However, there is now evidence that such 'back-tracking' calculations give fairly reliable estimates of blood alcohol levels some hours previously, and results are admissible as evidence in drink-driving offences [Lewis, 1987]. In this study, stated recent alcohol intake clearly needed validation, and this more objective method was therefore adopted.

Stated recent intake was compared with severity of injury to investigate the possibility that these two factors were inter-related. A new severity scale of injury was devised for this purpose (see below).

3.3.5 Injuries

Injuries were categorised as in Section 3.1.4, and facial wounds were also categorised as upper, middle and lower third injuries, and also left-sided, right-sided and central - a total of 9 zones [Shep-

herd et al, 1987]. Where haematomas and lacerations overlapped zone margins, injury was recorded only in the zone of maximum injury, although extensive injury was recorded in more than one zone as necessary. Thus, a laceration affecting the right frontal region was recorded as 'upper, right' and left-sided periorbital haematoma was recorded as 'middle left', unless the supra-orbital region was most affected, in which case it was classified as 'upper left'. Haematomas were not counted separately if there was an underlying fracture, though all lacerations were separately recorded. Intra-oral lacerations were counted as lower or middle third injuries unless they involved the attached gingivae as part of a compound fracture, when they were ignored. Sprains and other joint injuries not associated with fractures were classified as haematomas.

The nature and cause of injury were compared and alleged weapons categorised as fist, feet, head, blunt weapon, glass, other sharp weapon, and firearm. Fractures were categorised in terms of the bone affected (e.g. right humerus, nasal complex, left zygomatic complex, etc.).

3.3.6 Laboratory Procedures

Blood Ethanol Levels

On receipt of the sample in the laboratory, analysis of blood ethanol level was carried out by means of gas chromatography. This is a suitable and well-established technique which involves dilution in an internal standard solution, mixing and injecting into the gas chromatograph, measurement of the areas under the peaks produced by a paper recorder, and calculation of ethanol concentration. In this study, the gas chromatograph (Pye Unicem, Cambridge)contained Chromasorb 101 (80-100 mesh) and glass beads (40 mesh) heated to 145°-150°C,

through which nitrogen was passed at a flow rate of 50ml/minute. The reagents used were:

1. sodium metabisulphite solution (10%) (preservative);
2. propan-1-ol (5%) (internal standard);
3. stock ethanol solution (5%) (control solution).

For each sample, 500µl internal standard solution contained in a 9 x 44mm polytube was added to 200µl of blood, mixed and capped. 1µl was then introduced into the chromatograph and the integrator started, which looked for changes in detector output.

Concentration of blood ethanol was then calculated using the formulae:

1. $$\text{Response factor (F)} = \frac{\text{ethanol standard concentration}}{\text{relative area under ethanol standard peak}}$$

2. [Ethanol] (mg/100ml) = F x relative area of test ethanol peak.

Testing of samples which had been purposely contaminated with the preparation solution (isopropyl alcohol) demonstrated separate discrete peaks, and this dispelled concern that accidental contamination might result in erroneous ethanol levels.

Gamma-glutamyl Transferase (γ-GT)

γ-GT levels were estimated as described by Szasz [1969] and recommended by the Scandinavian Committee on Enzymes [SSCC, 1976]. The test is based on the fact that γ-GT catalyses the transfer of the gamma-glutamyl group from the synthetic substrate L-g-glutamyl p-nitroanilide to glycylglycine, resulting in the formation of p-nitroaniline which absorbs at 405nm. The rate of production of this chromophore is directly proportional to the γ-GT activity:

L-g-glutamyl p-nitroanilide + glycyl glycine $\xrightarrow[\text{pH 8.25}]{\gamma\text{-GT}}$ L-g-glutamyl-glycylglycine + p-nitroaniline

Tests were carried out in a Random Access Analyser (Technicon RA1000,

Basingstoke) using filtered 2-amino-2-hydroxymethyl propane-1-3-diol (buffer), glycylglycine diluted in water adjusted to pH 8.25 and L-g-glutamyl-3-carboxy-4-nitroanilide as substrate.

3.3.7 Injury Severity Scale

The literature review (Chapter 1) demonstrated that few studies of traumatised patients have considered severity of injury, particularly in the case of oral and maxillofacial surgical research. The exception to this has been road accident investigations where the Abbreviated Injury Scales [American Association for Automotive Medicine, 1980] take account of extent of injury and outcome. The concept of injury severity is helpful in that the influence of various factors may be identified with reference, for example, to minor, moderate or severe injury. An objective of this study was to examine the association of alcohol, posture and demographic factors with injury sustained in assault, and it was therefore necessary to use such a scale. Unfortunately, nearly all existing severity scales have been designed for analysis of severe injuries sustained in road accidents (e.g. the Abbreviated Injury Scale), and are therefore concerned with the effect of one major impact rather than several more minor impacts spread over time, such as occur during many assaults or fights. The author therefore devised the 'Assault Severity Index' (Table 3.3.7(i)).

This scale was evaluated with reference to the need for admission of patients to hospital, and to the number of fractures sustained by the 530 patients in the main investigation:

Let P_i be the probability that victim i (i = 1, ..., N) is admitted to hospital. The method of logistic regression consists of fitting

TABLE 3.3.7(i): The Assault Severity Index

Category	Injuries
0	Nothing recorded
I	1 bruise or 1 laceration (not both)
II	multiple bruises/lacerations
III	1 fracture only
IV	1 fracture and other bruises and/or lacerations
V	>1 fracture

$$\text{Logit}\ (P_i) = \log\left(\frac{P_i}{1 - P_i}\right) = \sum_{j=1}^{m} x_{ij}B_j$$

where there are m explanatory variables, x, and the Bs are unknown parameters. While estimation has to be carried out by an iterative procedure (such as that available in the GLIM package [Numerical Algorithms Group, GLM Manual, 1978] used here), the procedure for establishing an appropriate set of explanatory variables to constitute the set of xs is essentially the same as in simple linear regression. That is to say, the change in overall fit of the model is compared in a stepwise selection process in which the fit is assessed on the basis of the deviance, D (which is the analogue of the residual sum of squares in linear regression), and this is compared with critical values of the chi-squared distribution. The overall degrees of freedom are N - m, and using the properties of the distribution, changes in D between successive (nested) models with, say, m_1 and m_2 parameters also follow the same distribution, with $(m_2 - m_1)$ degrees of freedom. Table 3.3.7(ii) presents the detailed results, and a classification of patients is set out in Table 3.3.7(iii).

TABLE 3.3.7(ii): Probability of Admission to Hospital

Model for Logit (Pi)	Deviance	df	χ^2 Statistics		Significance
(0) constant alone	470.0	529	0 vs 1	=83.0	p=0.0
(1) no. of fractures	387.0	528	0 vs 2	=89.3	p=0.0
(2) severity index (5 factor levels)	380.7	524	1 vs 3	=7.7	p>0.1
(3) (1) & (2)	379.3	523	2 vs 3	=1.4	p>0.1

TABLE 3.3.7(iii): Severity of Injury Index

Category		0	I	II	III	IV	V	Total
Admission to Hospital	Yes	1	11	19	9	22	24	86
	No	9	139	213	23	52	8	444
	Total	10	150	232	32	74	32	530
Proportion Admitted		0.1	0.07	0.08	0.28	0.30	0.75	0.16

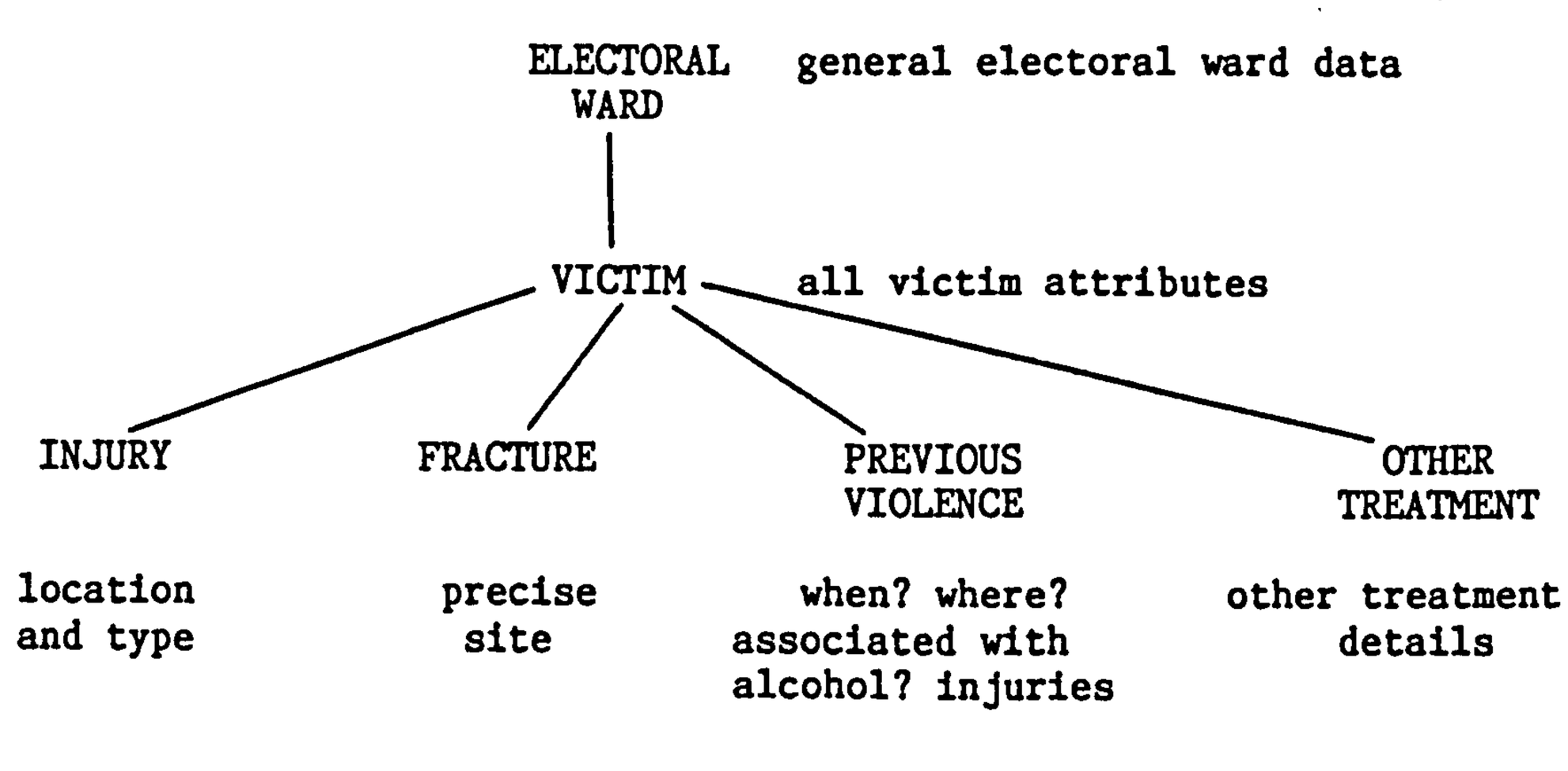
The value of the deviance for models (1) and (2) indicates a very good fit to the data, and both improve dramatically on the model of constant probability (0). The index therefore proved to be a useful predictor of the need for admission to hospital, and was adopted for data analysis.

3.3.8 Computer Data Base and Statistical Methods

Data were stored in a data base compiled using the Multics Relational Data Store package [MRDS, Honeywell, 1983] on the mainframe computer (Honeywell, Hounslow) of the University of Bristol Computer

Centre. MRDS is a relational Database Management System [DBMS, Date 1981], also offering Standard Query Language [SQL, CCTA 1987]; de facto, a standard language for updating and retrieving data. This was developed by IBM as part of its research into retrieval database systems. It has since been adopted by other companies for use with in-house management systems (DBMs) such as Oracle Inc. with the Oracle product, and Relational Technology Inc. have included SQL as an option in Ingres [CCTA, 1987]. A relational database was chosen because it allowed the data to be presented as a set of tables made up of 'rows' and 'columns' (e.g. the 'VICTIM' table contains the identifiable attributes about the victims, such as age, sex, etc.). The database structure is presented in Appendix II and is summarised in Figure 3.3.8.

FIGURE 3.3.8: Database Outline (Summary)



It was also possible to combine tables relating to various groups of victims, thus obviating the need for duplication of data, and also saving storage space. Any row could be selected by stating conditions (e.g. select all victims >30 years), and each row could be uniquely identified (e.g. by victim number in VICTIM table). When data were

selectively retrieved, a new table could be formed, allowing further analysis in the case of complicated queries. In addition, further programmes were written in Programme Language - 1 [PL/1, Honeywell, 1976] to obtain frequency tables and statistical analysis (SQL can only find minima, maxima, averages and counts). PL/1 was chosen because BASIC could not be used for subroutine 'calls', and the other alternative language - FORTRAN - could not easily deal with text.

The chi-squared statistical test was used to assess the significance of the association between variables [Seigel, 1956], and values were expressed as 'observed' and 'expected'. Where cells in contingency tables contained low numbers (<5), tests were repeated after grouping of data* to confirm levels of significance. Thus, the need for duplication of tables was obviated (i.e. the need for tables showing overall counts and grouped data. Correlation coefficients (r) were calculated where applicable. 'Rounding up' of percentages resulted in lack of addition to exactly 100% in some tables. The Mann-Whitney non-parametric test was used to analyse psychometric data [Seigel, 1956].

3.4 Social Effects of Assault

3.4.1 Introduction

The social effects of violence were assessed by means of semi-structured and tape-recorded interviews of 30 randomly-selected patients, carried out 6 months after the assault. These extended interviews were designed to evaluate the effects of violence in terms of initial emotional reactions, reactions to medical treatment, relationships (including that with the assailant(s)), the relation between physical and social sequelae, and behavioural changes. A principal objective of this part of the investigation was to assess whether

* Where this grouping has been carried out, Tables are marked (†)

victims experienced a loss of self-respect following the assault, manifest by emotional reactions known to follow other types of loss (Section 3.4.2). Clearly, responses of only 30 patients did not allow precise quantitative investigation in the style of Popper's hypothetico-deductive model for scientific research [Popper, 1959], but qualitative methods, widely used in Sociology, were possible [Kirk and Miller, 1986]. This part of the study utilises such research methodology, whose validity and reliability is discussed in Section 3.4.3.

3.4.2 Loss and Change

The response to loss has been studied in relation to various phenomena, including bereavement, slum clearance, innovation in business and, in Africa, the emergence of large cities from rural tribal communities. Responses to all these changes seem to share the same characteristics, and involve an initial expression of grief, followed by gradual reorganisation of relationships [Marris, 1974]. Denial, apportionment of blame, and recalling the settled period prior to loss are all symptoms of the grief which follows bereavement. In addition, there may be an unreal sense of a dead person's continuing presence [Gorer, 1965], apathy, withdrawal from relationships, irritability and thoughts of suicide. Hostility towards others may be part of apportionment of blame, though this may be turned inwards and give rise to physical and psychiatric disorders. These characteristic responses have been observed in British and American studies, and also in bereaved women receiving psychiatric care [Lindemann, 1944; Marris, 1958; Murray-Parkes, 1965]. Recovery from grief involves a gradual reinvestment of meaning in other relationships, sometimes over a 2-year period or longer. Mourning, or the resolution of grief, involves the repair of mental wounds in the bereaved as much as or more than

sadness or nostalgia for the past [Marris, 1974]. Common reactions have been expressed as "I lost all interest", "even when we went on holiday I wasn't there". Previous responses to environment, friends, and the home, as well as resentments and anxieties, are all bound up with the person lost, so that fundamental readjustments become necessary. For example: "'Thought after thought, feeling after feeling, action after action' had H (Lewis' wife) for their object. Now their target is gone" [Lewis, 1961]. This readjustment is gradual, and is often characterised by ambivalent behaviour. The bereaved may set about everyday tasks with enthusiasm and new-found efficiency, yet at the same time may say that there is nothing to live for. They may reject friends, yet be very lonely. Gradually, though, in a normal recovery, the fact of a loved one's death is incorporated into the basis for behaviour and relationships.

Abnormal responses to bereavement include outward calmness, the suppression of sorrow and efficient reorganisation of life, all behaviour which may appear to others as a hollow, inappropriate response, characterised by haste and poor judgement. This initial reaction may develop into physical illness or neurosis [Marris, 1974]. A further product of chronic unresolved grief has been described as 'mummification' [Gorer, 1965], when the bereaved settle into long-lasting depression and anxiety. These responses appear similar to those found in patients with Post Traumatic Stress Disorder (see p.57), though they do not include 'flash-backs' to a violent incident.

This process of bereavement has also been described in the inhabitants of slums who have been resettled, such as residents of the West End of Boston [Fried, 1963] and in residents of inner Lagos who were resettled in new suburban estates [Marris, 1961]. A grief reaction was observed, characterised by feelings of loss, inability to

make sense of life, longing, depression and anger. Whereas bereavement involves one individual, however, resettlement involves whole communities, and reactions and adjustments are necessarily expressed corporately as well as individually. Any loss (of self-respect) following assault may nevertheless be more akin to bereavement, in that the victim usually remains in a familiar environment, whereas in insensitive slum clearance victims are moved out of a neighbourhood and nearly all links with the past destroyed [Marris, 1974]. Conversely, bereavement is usually followed by customs such as an expected period of mourning, temporary withdrawal from societal activities, formal funeral arrangements and postponement by close relatives of cheerful events such as marriage. These conventions tend to help and comfort the bereaved. In the case of violence, however, which was beyond the experience of most of the population until recently, no such conventions exist, and agencies concerned with victim support are still in an early stage of development [Maguire and Corbett, 1987].

3.4.3 Reliability and Validity in Qualitative Research

Qualitative research is an established method of inquiry in Sociology, particularly in relation to the study of the interaction of individuals in their own environment. It has been claimed that qualitative sociological research can be as objective as quantitative investigations in Physics of any other natural science [Kirk and Miller, 1986]. To substantiate this, it has been pointed out that many scientific discoveries have resulted not from quantitative hypothetico-deductive methods (where the investigator must suspect what will be discovered) [Popper, 1959], but from 'accidents' occurring during the course of experimental work (serendipity). Examples include the discovery of Penicillin [Fleming, 1946] and the usefulness

of the Gram stain in bacteriology [Beveridge, 1950], though qualitative studies were required to confirm and elaborate these discoveries. Relaxation of the narrow definitions of the hypothetico-deductive model may thus facilitate discovery of the new and unexpected, though this remains a suitable method for resolving conflicts of opinion.

Qualitative research in Sociology has also been carried out because of the problems innate in quantitative investigation, which limit accuracy (no experiment can be perfectly controlled, and no instrument perfectly calibrated). In addition, though a particular question might elicit the same response in all individuals in a study group, this might reflect some prejudice or misunderstanding on the part of those individuals rather than the response expected by the investigator, so that preliminary qualitative work becomes necessary [Kirk and Miller, 1986]. Following from this, the qualitative researcher, armed with background information and broad aims, begins a Sociological investigation with little idea and no assumptions as to the likely outcome, and uses available resources to observe and interview individuals in their own environment. Hypotheses then emerge, and are tested in conversation or by observation, and quantitative studies may later be required to settle conflicts.

3.4.4 Patients and Semi-structured Interview Design

This study of randomly-selected adult victims of assault was preceded by a pilot study involving 6 extended interviews with patients not included in the main investigation, to clarify areas of questioning which could be incorporated into a semi-structured interview. Based on this experience, an interview schedule was then drawn up (Figure 3.4.4).

Standard letters were then sent to each of the 30 randomly-

FIGURE 3.4.4: Semi-structured Interview

The assault (what happened)

Emotional response (anxiety, anger and depression)

Effects on relationships (friends, parents, siblings, work-mates, husband or other male partner, wife or other female partner)

Previous assault (child abuse, violence at school, violence as an adult)

Effect of changes in appearance

Fear of further assault

Behavioural changes

Initial hospital treatment

Effect of residual physical symptoms

Relationship(s) with the assailant(s)

selected assault victims [Numerical Algorithms Group, 1983] 10 days before interview, seeking permission to visit them at home in the early evening. All patients were interviewed 6 months after assault (± 4 weeks) and by the author. A total of 45 study numbers were randomly selected from the computer data base, in case any of the first 30 were not at home, not contactable, or refused interview. In the event, this applied to 11 patients, and attempts were therefore made to contact a total of 41 patients. Five patients had moved from the address given in the Accident and Emergency Department and were interviewed at their new address, and one patient was interviewed in his works social club. Every interview was preceded by a short standardised explanation of the purpose, and every patient was asked for permission to tape-record what was said. All patients agreed to this, and the duration of interviews varied from 35 minutes to 55 minutes. Typed transcriptions were subsequently made, and checked with tapes for accuracy of transcription. On one occasion the tape recorder

ceased to function halfway through an interview and this was discovered later the same evening and as much detail as possible written down immediately. Transcripts (approximately 420 A4 sheets of double-spaced typescript) were then photocopied, one set kept intact and the other cut up into quotations relating to each enquiry in the semi-structured interview. Particular responses were counted to provide some quantitation.

3.5 Psychiatric Effects of Assault

3.5.1 Introduction

The literature review revealed areas of uncertainty concerning psychological and psychiatric sequelae of victimisation, particularly in relation to the interaction with physical effects. Unanswered questions were:

1. Is the established psychological response to assault unique, or similar to that which follows any kind of physical trauma?
2. What is the incidence, duration and magnitude of the psychological response after trauma?

3.5.2 Psychometric Testing

To answer these questions, psychometric testing of a group of patients with similar injuries was undertaken using self-administered questionnaires. The Hospital Anxiety and Depression (HAD) Scale [Snaith and Taylor, 1985] and the General Health Questionnaire (GHQ-28) [Goldberg, 1978] were used. Both tests have gained wide acceptance in assessing adults [Goldberg, 1985]. It seemed particularly important to assess anxiety because this has been described as part of the normal metabolic response to trauma [Perry, 1969] as a psychologi-

cal feature 3-6 weeks after assault and burglary [Maguire and Corbett, 1987], and as a manifestation of mourning in response to loss [Marris, 1974]. In addition, chronic depression in some victims of violence has been described by Shapland et al [1985], and also as part of an abnormal mourning process after bereavement [Gorer, 1965]. The HAD scale requires answers to 56 questions - 28 designed to identify anxiety and 28 to identify depression. A sample questionnaire is included in Appendix II.

The use of the General Health Questionnaire was appropriate because it is an established psychometric instrument which allows screening for psychiatric disorders (though further clinical investigation is always necessary to confirm and clarify the diagnosis [Goldberg, 1978]), and also because it has been used with the HAD scale for assessing various groups of patients [Snaith and Taylor, 1985]. In addition, it has been used to assess short-term upset in victims of assault and burglary [Maguire and Corbett, 1987], and comparative data are available from random community samples and from patients attending general practitioners [Goldberg et al, 1974]. The questionnaire poses 28 questions, divided into 4 sections, relating to somatic symptoms, anxiety and insomnia, social dysfunction and severe depression. An example is included in Appendix II.

3.5.3 Patients

Seventy-six consecutive patients attending the Bristol Dental Hospital for treatment of jaw fractures sustained in assaults, road accidents and falls were included in the study. In all these patients the principal injury was a fracture of the facial skeleton (usually zygomatic complex or mandibular fractures) and patients with injuries elsewhere were excluded. Questionnaires were administered in the

TABLE 3.5.3: Patients Undergoing Psychometric Tests

Cause of Injury	Number of Patients
Assault	42
Falls	18
Road Accidents	15
TOTAL	75

waiting room before every outpatient consultation, but only data relating to visits at one week and three months after injury were used in this investigation. This carefully controlled use is recommended by the authors of both tests [Goldberg, 1978; Snaith and Taylor, 1985].

RESULTS AND DISCUSSION

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CHAPTER 4

DEMOGRAPHIC, RACIAL AND SOCIO-ECONOMIC FACTORS IN ASSAULT

4.1 Demography

A total of 539 victims attended during the period of study, 455 (84%) males and 84 (16%) females. Age and gender of victims are presented in Table 4.1(a).

In addition to the greater proportion of male victims, there was also a difference between males and females with regard to lower numbers of males aged 30-34 years than expected, and a higher number of females in this age group. This also applied to victims living within the hospital catchment area (see Table 4.1(b)), although overall there was no significant difference between males and females. 67% of victims were aged between 15 and 29 years, and a further 18% aged between 30 and 39 years. Only 2.7% of victims were over 60 years. Mean age of male victims was 26 years, and of female victims was 27 years.

A comparison of the ages of victims living within the hospital catchment area with those of the population at large is set out in Table 4.1(b). There were more victims (males and females) in the 10-34 years age group than expected, compared with the hospital catchment population. Conversely, there were fewer victims than expected over the age of 40 years ($p = <0.001$).

Table 4.1(c) demonstrates assault rates for each of the 17 electoral wards within the hospital catchment area, and relates these with known indicators of social and material deprivation. Assault rates were highest in the most deprived wards (District, Easton and St. Pauls), and generally rates were low in the least-deprived wards,

although this correlation was weaker; for example, in Knowle and Southville, (wards with little deprivation) assault rates were actually comparatively high. The overall assault rate in the hospital catchment area was 1:703, although rates among the 16-24 age range were much higher (1:203) and in St. Pauls and Easton rates in this age group were 1:104 and 1:127.

315 of 539 victims (58%) resided within both the City boundaries and the hospital catchment area. 102 (19%) resided outside the City boundaries, and 122 (23%) resided in the City but in the catchment areas of Accident and Emergency Departments of other hospitals (see Table 4.1(d)).

Marital status of victims is given in Table 4.1(e). 72% were single, and there were significantly fewer single (and more married) females than expected. Conversely, there were more single (but fewer married) males than expected ($p = <0.05$). In terms of the hospital catchment population, there were more single, divorced and widowed persons than expected, but fewer married persons ($p = <0.0001$) (see Table 4.1(f)). This applied to both males and females.

Of 87 married victims, 21 were female and 66 male. Duration of marriage is given in Table 4.1(g). There were no significant differences between the two groups, except that more females were assaulted (29%) during the first year of marriage than were males (15%) ($p = <0.05$).

4.2 Racial Factors

Details of racial background are presented in Table 4.2(a).

White victims outnumbered black by a ratio of 40:1, and, compared with the hospital catchment population, there were more victims

originating from the New Commonwealth, Pakistan and elsewhere in the world than expected ($p = <0.01$).

Birthplace of victims is given in Table 4.2(b). Only 4% were born outside the UK/Eire, and 51% were born in Bristol.

4.3 Social Class, Socio-economic Group and Unemployment

Social class of victims is compared with that of the hospital catchment area in Table 4.3(a).

Although there were no significant differences between victims and the catchment population in terms of social class, there was a tendency towards more non-manual and semi-skilled workers in the victim group, but fewer unskilled manual workers than expected. Socio-economic group correlated broadly with age of school-leaving (Table 4.3(b)); for example, 59% of victims were manual workers (groups 3m, 4 and 5), and 58% left school at 16 years. Socio-economic group (SEG) of victims and of the hospital catchment population are presented in Table 4.3(c).

6% of victims were in Groups 1 and 2 (employers and managers), 5% in Group 4 (professional workers), 14% in Group 5 (ancillary workers, artists, foremen and supervisors), 16% in Group 6 (non-supervising clerical, sales and communications workers), 6% in Group 7 (personal service workers, e.g. dealing with food, drink and clothing), 31% in Group 9 (skilled manual workers), 11% in Group 10 (semi-skilled manual workers), 7% in Group 11 (unskilled manual workers), and 4% in Groups 12 and 15 (self-employed tradesmen and all agricultural workers). Compared with the hospital catchment population, there were fewer victims in Groups 1, 2, 6 and 11 than expected, but more in Groups 5 and 9.

Rates of unemployment among male victims and the remainder of the male hospital catchment population aged between 16 and 65 are given in Table 4.3(d). Overall, there was a highly significant difference between assault rate among unemployed males (1:190) compared with the rest of the male population (1:601) ($p = <0.001$). Assault rates were significantly higher for victims living in the four most deprived wards (St. Philip, District, Easton and St. Pauls), but also for those in some of the least deprived (Stockwood and Brislington) and only moderately deprived wards (Southville and Redland).

4.4 Discussion

Though this study appears to be the only survey of victims of assault attending a British hospital, results do tend to support many of the findings of the British Crime Survey [Hough and Mayhew, 1983] and surveys of hospital patients with maxillofacial injuries in relation to age and sex distribution [Hill et al, 1984; Ellis et al, 1985]. These investigations have all reported a preponderance of male victims, and those aged between 15 and 29 years. This study, however, also demonstrates a surprisingly large number of female victims aged between 30-34 years, and this may reflect that they were assaulted at home by their male partners, from whom escape was difficult, particularly if very young children were present [Gayford, 1975].

Neither the BCS nor maxillofacial surgical studies have considered victimisation in terms of the population at large, or of relative social or material deprivation in the areas where victims were resident. This study, however, suggests that the 16-34 age group is at greater risk of assault, and the over 40 years age group is at lower risk, and therefore supports the findings of the BCS [Hough and

Mayhew, 1983] that the elderly are at low risk of assault, though this is likely to be due to the avoidance of inner city streets by the elderly at night. Further, there were fewer married victims encountered in this study, especially married males, than expected, compared with the hospital catchment population. Taken together, these data suggest that spare-time activity [Smith, 1982] is an important predisposing factor in assault; usually in young, single persons spending more time away from home and in places of public entertainment. It has been suggested that males are particularly at risk in these circumstances because "individual worth and identity are at stake" [Ramsey, 1982] in confrontations with other males. However, although both single males and single females were over-represented in this study, compared with the catchment population, there were proportionately more married female victims than male, and also more females assaulted during the first year of their marriage. These findings indicate, not surprisingly, that violence within marriage predominantly affects the woman, and perhaps that violent husbands spend more time at home early in marriage, or that conflicts are more frequent at that time, or involve violence more often. Numbers of victims who were married were small, and this interpretation should therefore be treated with caution.

Results indicate that most victims lived within the City of Bristol. However, 23% lived outside City boundaries, and this, together with data relating to electoral ward of residence and place of assault, suggests that a large proportion of victims travel to the city centre for entertainment, where they are assaulted. Bristol is unusual in that there are few large towns with comparable facilities nearby, particularly to the South and West; the area principally served by the hospital, and the rate of city centre violence, may there-

fore be high compared with that in other cities.

Data concerning racial factors suggests that victimisation was more common among those originating outside Britain and Eire, although any interpretation of these data is difficult because census information is categorised under "birthplace of head of household" [OPCS, 1982]. Numbers of victims originating from India and Pakistan were small in this study, so that comparisons with previous investigations [Smith, 1982] which demonstrated proportionately higher rates of assault in this group are also problematic.

This investigation demonstrates an association between assault and social and material deprivation. This was particularly apparent in the poorest electoral wards of the City (St. Pauls, Easton, and District), though the assault rate was high in a few relatively prosperous areas such as Knowle and Southville. Conversely, the assault rate was low in one relatively deprived ward, St. Philip. These findings suggest that while assault is associated with deprivation, other factors also play a part. Analysis of employment data supports this conclusion; there was no significant difference between assault rates among the unemployed and the rest of the adult population in 7 of the 17 electoral wards within the hospital catchment area, though the overall assault rate was very significantly higher in the unemployed. Again, the link between assault and unemployment was strongest in the most deprived wards (St. Pauls, District and Easton). These hospital-derived data therefore support the view [Smith, 1982] that assault rate on its own is a reasonably accurate indicator of deprivation.

The finding that workers in socio-economic groups comprising ancillary workers, foremen, supervisors and skilled manual workers were significantly more likely to be victims compared with profession-

als and unskilled manual workers, also suggests that other factors influence the likelihood of victimisation, which have been shown to include frequent and prolonged city centre activity coupled with the means to support this [Sparkes, 1977; Smith, 1982]. This research suggests, therefore, that the aetiology of assault is multifactorial with regard to victims, involving deprivation, unemployment and age, sex and marital status, and possibly also other factors.

TABLE 4.1(a): Age and Gender of Victims‡

Age	Males		Females		Total	
	No. Obs/Exp	%	No. Obs/Exp	%	No.	%
10–14	8/8	1.7	1/1	1.2	9	1.7
15–19	117/115	25.9	19/21	22.9	136	25.2
20–24	118/117	26.1	21/22	25.3	139	25.8
25–29	75/74	16.6	12/14	14.5	87	16.1
30–34	45/51	9.7	16/9	19/3	60	11.3
35–39	31/30	6.8	5/6	6.0	36	6.7
40–44	21/20	4.7	3/4	3.6	24	4.5
45–49	16/15	3.6	2/3	2.4	18	3.3
50–54	5/4	1.0	1/1	1.2	6	1.1
55–59	4/4	0.8	0/1	0	4	0.7
60–64	8/7	1.7	0/0	0	8	1.5
65–69	2/3	0.4	1/1	1.2	3	0.6
>70	1/2	1.1	2/1	2.4	3	0.6
unknown	5	1.0	1	1.2	5	0.9
Total	455	100	84	100	539	100

χ^2 (Yates' correction) = 5.24
p = NS
obs = observed
exp = expected

TABLE 4.1(b): Age of Victims and of Hospital Catchment Population

Age	Hospital Catchment Population Victims (No.)				Hospital Catchment Population Persons (No.)			
	M		F					
	Obs/Exp	(%)	Obs/Exp	(%)	M	(%)	F	(%)
10–19	70/67	(26)	14/17	(22)	16689	(16)	16556	(15)
20–24	63/64	(23)	17/16	(26)	9985	(10)	10056	(9)
25–29	48/48	(18)	11/11	(17)	8930	(9)	8509	(8)
30–34	31/35	(12)	12/8	(18)	8288	(8)	7716	(7)
35–39	16/17	(6)	5/4	(8)	6355	(6)	6076	(5)
>40	41/38	(15)	6/9	(9)	54767	(52)	63177	(56)
Total	269	(100)	65	(100)	105014	(100)	112090	(100)
	χ^2 (Yates' corrected) = 2.21 p = NS				χ^2 (Yates' corrected) = 251.72 p = <0.001			

TABLE 4.1(c): Electoral Ward of Residence, Population, Assault Rate and Deprivation Ranking

Electoral Ward	Adult Population	Population (16–29 yrs)	No. of Assaults (adults)	No. of Assaults (16–29 yrs)	Assault Rate (adults)	Assault Rate (16–29 yrs)	Social and Material Deprivation* (rank)	Overall Assault Rate** (rank)
Stockwood	30,221	6,833	37	30	1:817	1:228	1	5
Brislington	16,310	3,615	13	10	1:1255	1:362	2	1
Bedminster	10,410	2,079	12	10	1:868	1:208	3	3
Knowle	12,246	2,854	19	11	1:645	1:259	4	12
Clifton	11,866	3,671	15	9	1:791	1:408	5	7
Southville	8,617	2,035	19	15	1:454	1:136	6	14
Redland	11,453	3,747	16	9	1:716	1:416	7	9
St. George W.	9,275	2,106	10	8	1:928	1:263	8	2
Somerset	13,514	2,933	17	12	1:795	1:244	9	6
Cabot	9,404	2,467	18	11	1:522	1:224	10	13
Windmill Hill	7,925	2,159	11	8	1:725	1:270	11	8
Hengrove	20,500	4,705	31	20	1:661	1:235	12	11
Bishopsworth	25,759	7,344	38	22	1:678	1:334	13	10
St. Philip	4,975	825	6	3	1:829	1:275	14	4
District	11,776	4,643	29	16	1:406	1:290	15	15
Easton	9,075	2,165	24	17	1:378	1:127	16	16
St. Pauls	8,068	1,976	42	19	1:192	1:104	17	17
Total	221,444	56,157	315	230	1:703	1:244		

* Deprivation ranking 1 = least deprived, 17 = most deprived

** Assault rate 1 = least assault, 17 = most assault

TABLE 4.1(d): Residence of Victims

Electoral Ward of Residence	No. of Victims	%
In Bristol and Weston District Health Authority (DHA) and inside City boundary (wards as in Table 4.1(c))	315	58
Outside DHA boundaries but within City boundaries (Avon, Henbury, Southmead, Horfield, Stapleton, Hillfields, St. George E., Eastville, Bishopston, Durdham, Westbury-on-Trym)	102	19
Outside City boundaries (within and outside DHA boundaries)	122	23
Total	539	100

TABLE 4.1(e): Marital Status of Victims

Marital Status	Males		Females		Total	
	No. Obs/Exp	(%)	No. Obs/Exp	(%)	No. Obs/Exp	(%)
Married	78/85	(18)	23/16	(28)	101	(19)
Divorced	30/31	(7)	7/6	(8)	37	(7)
Single	333/321	(74)	45/59	(57)	380	(72)
Widowed	2/3	(0.4)	2/1	(2.4)	4	(0.8)
Separated	5/8	(1.1)	4/1	(4.8)	9	(1.7)
Total	448	(100)	83	(100)	531	(100)

χ^2 (Yates corrected) = 11.46
$p = <0.05$

TABLE 4.1(f): Marital Status of Victims and of Hospital Catchment Population*

(* includes only persons over 16 years of age)

Marital Status	All Victims				Victims in Hospital Catchment Area				Hospital Catchment Population		
	M Obs/Exp	F Obs/Exp	Total	(%)	M Obs/Exp	F Obs/Exp	Total	(%)	M	F	(%)
Married	78/85	23/16	101	(19)	46/51	18/13	64	(19)	49690	49899	(57)
Divorced	30/31	7/6	37	(7)	20/21	6/5	26	(8)			
Single	333/321	47/59	381	(72)	195/186	36/45	231	(70)	33320	40451	(43)
Widowed	2/3	2/1	4	(1)	2/2	1/1	3	(1)			
Separated	5/8	4/1	9	(2)	4/6	4/2	8	(2)	–	–	
Total	448	83	532	(100)	267	65	332	(100)	83010	90350	(100)

χ^2 (Yates corrected) = 16.52
$p = <0.05$

χ^2 (Yates corrected) = 7.57
$p = <0.05$

χ^2 (Yates corrected) = 195.84
$p = <0.0001$

TABLE 4.1(g): Duration of Marriage in Male and Female Victims

Marriage Duration (Years)	Males		Females		Total	
	No.	(%)	No.	(%)	No.	(%)
0 - 1	10	(15)	6	(29)	16	(18)
1.1 - 3	8	(12)	3	(14)	11	(13)
3.1 - 10	21	(32)	4	(19)	25	(29)
<10	27	(41)	8	(38)	35	(40)
Total	66	(100)	21	(100)	87	(100)

TABLE 4.2(a): Racial Characteristics of Victims and Hospital Catchment Population*

(* includes only persons over 16 years of age)

Racial Group (Birthplace of Head of Household)	All Victims**		Victims in Hospital Catchment Population		Hospital Catchment Population	
	No.	(%)	Obs/Exp	(%)	No.	(%)
UK/Eire	475	(95)	282/294	(94)	154997	98
New Commonwealth/ Pakistan	8	(2)	7/3	(2)	1649	1
Rest of the World	14	(3)	11/3	(4)	1437	1
Total	497	(100)	300	(100)	158083	100

χ^2 (Yates corrected) = 30.17
p = <0.01

** UK/Eire = white
New Commonwealth/Pakistan = black, 'half-caste', Indian/Pakistani
Rest of the World = other

TABLE 4.2(b): Birthplace of Victims

Birthplace	Victims (n = 539)	
	No.	(%)
Bristol	273	51
Elsewhere in UK/Eire	202	37
New Commonwealth/Pakistan	8	1.5
Other	14	2.6
Unknown	42	7.8
Total	539	100

TABLE 4.3(a): Social Class of Victims and Hospital Catchment Population*

(* includes only victims aged 16-65 years. Students, apprentices and other trainees included in appropriate group)

Social Class	Group	All Victims		Victims in Hospital Catchment Population		Hospital Catchment Population	
		Obs/Exp	%	Obs/Exp	%	No.	%
Professional and Managers	1&2	79	24	44/46	23	37960	25
Non-Manual	3n	55	17	35/25	19	20660	13
Manual							
Skilled	3m	121	37	65/72	35	59390	38
Semi-skilled	4	52	16	35/31	19	25500	17
Unskilled	5	22	7	9/13	5	10990	7
Total		329	100	188	100	154500	100

χ^2 (Yates corrected) = 6.63
p = NS

TABLE 4.3(b): Victims' School Leaving Age (n = 382)

School Leaving Age	No. of Victims	(%)
0*	23	(6)
13	2	(1)
14	15	(4)
15	66	(17)
16	221	(58)
17	20	(5)
18	31	(8)
19	3	(1)
Total	382	(100)

* 0 = still at school

TABLE 4.3(c): Socio-economic Group (SEG) of Victims* and of the Hospital Catchment Population

(* includes only those in employment)

Socio-economic Group	All Victims		Victims in Hospital Catchment Population		Hospital Catchment Population	
	No.	%	Obs/Exp	%	No.	%
1&2	21	6	11/17	6	10190	9
4	18	5	8/6	4	3580	3
5	46	14	31/19	17	11240	10
6	54	16	30/41	16	24640	22
7	20	6	12/10	6	6200	6
9	103	31	51/38	28	22810	21
10	38	11	25/27	14	16160	15
11	22	7	9/17	5	10120	9
12&15	13	4	8/6	4	5430	5
Total	335	100	185	100	110370	100

χ^2 (Yates corrected) = 22.27
p = <0.01

TABLE 4.3(d): Assault Rates Among Unemployed Male Victims and Among the Rest of Adult Males Within the Hospital Catchment Population (by Electoral Ward)

Electoral Ward	Social Deprivation (Rank*)	Assault Rate in Unemployed Males	Male Catchment Population	p	Overall Assault Rate (Rank)**
Stockwood	1	1/90	1/503	<0.001	5
Brislington	2	1/182	1/972	<0.05	1
Bedminster	3	1/274	1/357	NS	3
Knowle	4	1/139	1/478	<0.05	12
Clifton	5	1/243	1/503	NS	7
Southville	6	1/47	1/331	<0.001	14
Redland	7	1/142	1/1231	<0.001	9
St. George W.	8	1/171	1/418	NS	2
Somerset	9	1/481	1/341	NS	6
Cabot	10	1/252	1/259	NS	13
Windmill Hill	11	1/187	1/923	<0.01	8
Hengrove	12	1/208	1/364	NS	11
Bishopsworth	13	1/386	1/391	NS	10
St. Philip	14	1/224	1/556	<0.05	4
District	15	1/118	1/247	<0.01	15
Easton	16	1/63	1/2135	<0.001	16
St. Pauls	17	1/31	1/199	<0.001	17
Total		1/190	1/601	<0.001	

* 1 = least deprived, 17 = most deprived

** 1 = lowest rate, 17 = highest rate

CHAPTER 5

CIRCUMSTANCES OF THE ASSAULT

5.1 Time of Assault

Time of assault is presented in Table 5.1(a) and Figure 5.1(a). Most victims were assaulted between 10.00pm and 1.00am, and fewest between 4.00am and 9.00am. There was a significant difference between assault time, for men and women. More women than expected were assaulted between 9.00am and 8.00pm, and fewer than expected between 8.00pm and 3.00am (χ^2 = 31.1, p = <0.05), whilst the reverse applied to males.

Day of assault is presented in Table 5.1(b) and Figure 5.1(b). 69% of assaults occurred between Friday and Sunday, and although there was a tendency for more men than expected to be assaulted on Saturday (but fewer women), this difference was not statistically significant.

Data concerning month of assault are presented in Table 5.1(c) and Figure 5.1(c). Most assaults took place between March and May (32%) and between September and December (40%), and least in August (2%).

There was a significant difference between males and females, particularly in June, when fewer males but more females than expected attended the Department as the result of assault.

5.2 Location of Assault

Location of assault, by electoral ward, is presented in Table 5.2(a). Of 539 incidents, 190 (35%) occurred in the victim's home ward, and 263 (49%) in the inner city wards of Cabot, St. Pauls

and St. Philip. Only 38 (7%) of incidents occurred outside city boundaries, and 27 (5%) in the catchment area of the two other Accident and Emergency Departments within the city boundaries (Frenchay and Southmead hospitals).

The χ^2 test demonstrated a significant difference between location of assault in male and female victims. Fewer males than expected were assaulted in the inner city residential wards of Easton, District and St. Pauls, but more in largely non-residential inner city areas such as St. Philip and Cabot. Conversely, fewer females were assaulted in the non-residential areas, but more assaults took place in inner city residential areas ($\chi^2 = 53.5$, $p = <0.05$).

Precise location of assault is presented in Table 5.2(b).

Most assaults involving males took place in the street or in pubs and clubs (290 incidents - 35%), but females were most often assaulted at home. The difference between males and females was highly significant statistically in respect of domestic assault. More than 2.5 times the expected number of assaults directed against women took place at home. In addition, more males than expected were assaulted in pubs, clubs and in the street. Two assaults were reported as having occurred in police stations.

5.3 Alleged Reason For Assault

Alleged reasons for assault are presented in Table 5.3. Reasons for assault most commonly reported were arguments, particularly those occurring at home (20%), although 26% of incidents were reported to be unprovoked. Robbery (including 'mugging') was alleged to be the reason for assault in 12% of incidents, and intervention in an existing altercation in 10% of cases. A highly significant difference ($p =$

<0.001) was detected between males and females, particularly with regard to domestic arguments which ended in violence, where many more females than expected reported this aetiology, and many fewer males. Overall, 26% of assaults were claimed to be unprovoked, and males were more likely to report an unprovoked attack than females.

5.4 Activity at the Time of Assault

Reported activity at the time of assault is presented in Table 5.4.

Most victims (85%) reported that they had been stationary (standing, arguing, 'talking' or drinking (45%)) at the time of assault, or on foot (walking, leaving, entering (40%)). Some had been dancing (2%), working (8%), participating in sport (2%) or in a motor vehicle (3%). Female victims reported that they had been arguing more frequently than did males, who reported that violence occurred whilst drinking more frequently than did females ($p = <0.05$).

5.5 Discussion

Both this investigation and previous research have demonstrated that assaults occur most commonly late at night and at weekends. In this study, nearly half the assaults took place between 10.00pm and 1.00am, and more than half of the assaults on Fridays and Saturdays. Criminological research in Southampton, and maxillofacial surgical research, also suggest that more assault occurs at these times [Hill et al, 1984; Hope, 1985], and this supports the view that progressive alcohol intoxication may be a factor (see below), or that the end of licensing hours and ejection from pubs and clubs or large numbers of

intoxicated persons into the street at the same time, predisposes to violence [Ramsay, 1982; Hope, 1985]. This study, however, indicates that assaults directed against women take place at significantly different times, with proportionately more assaults occurring during the day, probably because the aetiology of domestic assault by male partners differs from the aetiology of city centre assault involving only males. However, alcohol could be important in both categories. In domestic assault, unemployment of the male partner may be important, giving rise to longer periods at home, frustration, and greater numbers of arguments between partners [Gayford, 1975].

Data relating to month of assault indicate a progressive increase in numbers of assaults affecting males from January to May, suggesting a link between warmer weather, increased hours of daylight, and more city centre violence. This trend was less apparent in assaults on women, however, which probably reflects the fact that more women were assaulted at home, where these factors are not important.

Surprisingly, however, fewer assaults directed against males, and more assaults directed against females, occurred in June - suggesting that males tend to remain at home during this month. This finding supports previous Bristol studies [Al-Kotany, 1986; Shepherd et al, 1987], and may reflect the need for reduced expenditure on city centre entertainment just prior to an annual holiday. Attendance of assault victims (both male and female) was reduced in July and August compared with the period from March to May, and this may reflect that annual holidays are taken during this period, taking potential victims and assailants away from Bristol. This finding contrasts with those of studies of maxillofacial injuries carried out in Sweden, which have found an increased incidence of injury in all the summer months [Anderson et al, 1984]. The whole of Stockholm County, as well as

injuries arising from road accidents, were included in these studies, however, so that direct comparisons are misleading.

Peak incidence of assault occurred in September, and this supports the findings of previous Bristol surveys [Shepherd et al, 1987]. Attendance of victims was less frequent in October, but peaked again in December, possibly secondary to increased city centre activity associated with Christmas celebrations. Interestingly, attendance of women decreased over the Christmas period, supporting this hypothesis, or possibly reflecting that marital ties are more highly valued at this time of the year.

Location of assault in relation to electoral ward has been considered in Section 4.4. It was striking that very few victims were assaulted in the catchment areas of the two other Accident and Emergency Departments within Bristol city boundaries, suggesting that victims tend to visit the nearest hospital for treatment, or that few assaults took place there. Further, many victims resident in these areas who were assaulted in the city centre sought medical help at the city centre hospital. These findings support the view that inner city hospitals are valid models for investigations of violence occurring in nearby communities, despite the presence of other medical facilities in adjacent areas. It has also been found in previous research that only about 5% of victims seek treatment from their general practitioners, so that little additional epidemiological information would be gained from general practice-based research [Shapland et al, 1985].

Precise location of assault varied with regard to gender of victim, with proportionately more assaults directed against women occurring at home, though one third of female victims were assaulted in the street or in pubs and discotheques. The contention that women are almost all assaulted at home by their male partners [Gayford,

1975] can therefore only be a broad generalisation, though clearly domestic assault is an important problem which appears to have been seriously undercounted in the British Crime Survey (domestic assault: 11%, BCS [Hough and Mayhew]; 17% in this investigation).

Data concerning alleged reasons for assault must be treated with caution. Clearly, the uncorroborated evidence of an intoxicated victim would be unsatisfactory in a court of law. However, these data provide some interesting new pointers, and also tend to confirm previous findings. For example, only 2% of victims reported football hoolinganism as a cause for violence; fewer than the number who reported road traffic disputes as a cause. Interestingly, only 1% of victims attributed the assault to racial factors. By contrast, arguments, robbery and intervention in existing altercations were blamed in one third of all assaults. The prevention of violence should perhaps involve measures to prevent or defuse arguments before they escalate into physical violence, perhaps by education of bar and club staff and the police. Third-party intervention in an existing conflict is clearly not without risk. The safest and most effective means of accomplishing this should be widely known among young people.

The widely held view among medical and nursing staff that victims nearly always claim that violence has no obvious cause, or has been unprovoked is not supported by this study, and it is important that staff do record victims' explanations of violence for medico-legal purposes [Holmstrom and Burgess, 1978].

TABLE 5.1(a): Time of Assault ‡

Time (hour of day)	No. of Victims (n = 510)			
	M Obs/Exp	F Obs/Exp	Total	(%)
901–1000	66/62	7/11	73	14
1001–1100	8/10	4/2	12	2
1101–1200	6/8	3/1	9	2
1201–1300	7/6	0/1	7	1
1301–1400	11/13	4/2	15	3
1401–1500	20/21	5/4	25	5
1501–1600	12/14	5/3	17	3
1601–1700	13/14	3/2	16	3
1701–1800	13/15	5/3	18	3
1801–1900	8/11	5/2	13	2
1901–2000	18/21	7/4	25	5
2001–2100	24/22	2/34	26	5
2101–2200	39/36	4/7	43	8
2201–2300	59/55	6/10	65	12
2301–2400	69/67	10/12	79	15
0001–100	66/62	7/11	73	14
101–200	33/32	5/6	38	7
201–300	15/14	1/2	16	3
301–400	4/4	1/1	5	1
401–900	5/5	1/1	6	1
Unknown	24	5	29	5
Total	431	79	510	100

χ^2 (Yates corrected) = 31.1
p = <0.05

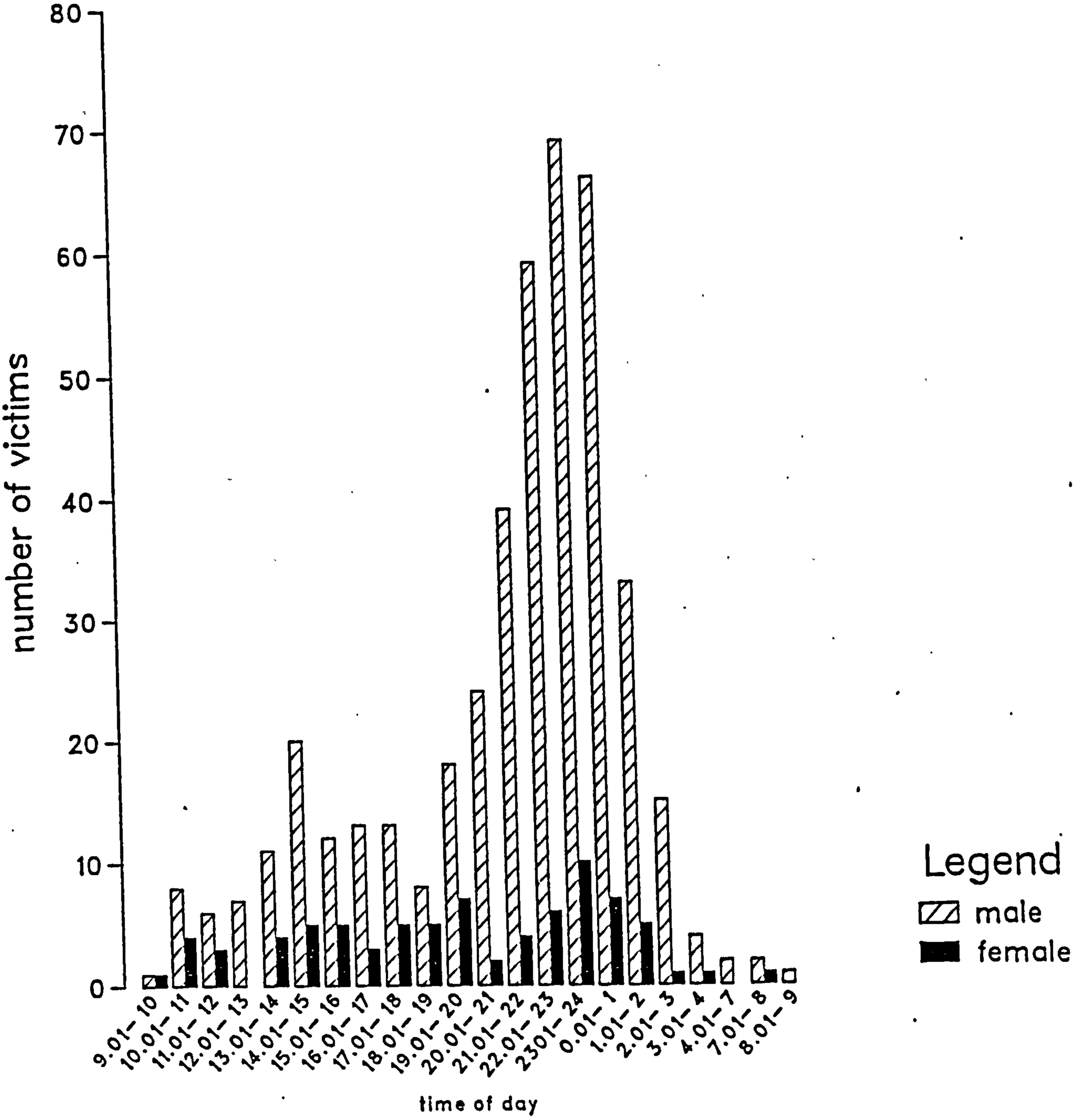

FIGURE 5.1(a): Time of assault by hour of day

TABLE 5.1(b): Day of Assault

Day	No. of Victims (n = 539)		Total	
	M Obs/Exp	F Obs/Exp	No.	%
Monday	33/35	8/6	41	8
Tuesday	34/35	8/7	42	8
Wednesday	30/32	8/6	38	7
Thursday	39/41	9/7	48	9
Friday	111/111	20/20	131	24
Saturday	149/140	17/26	166	31
Sunday	59/62	14/11	73	14
Total	455	84	539	100

χ^2 (Yates corrected) = 6.42
p = NS

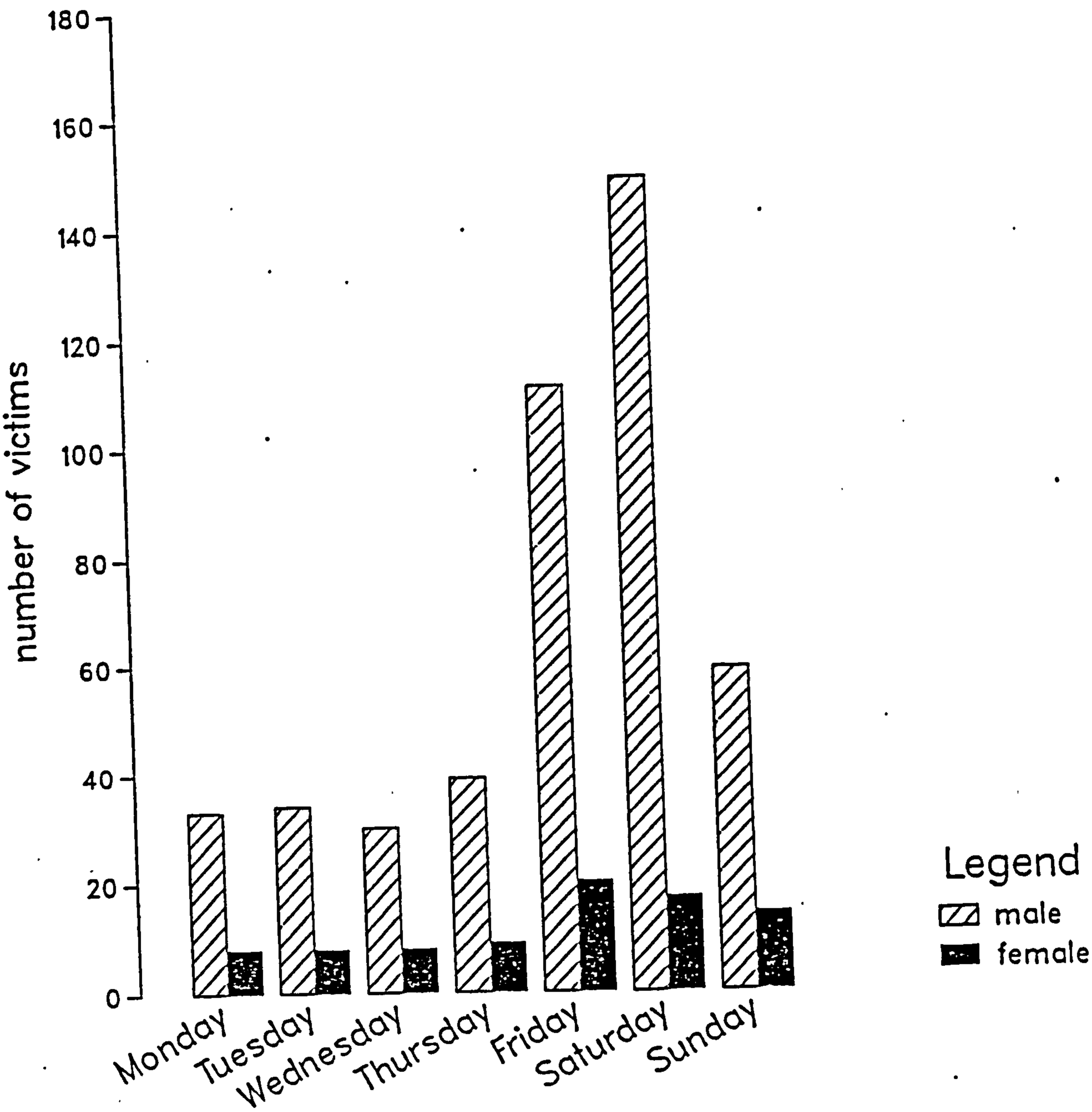

FIGURE 5.1(b): Time of assault by day of week

TABLE 5.1(c): Month of Assault

Month	No. of Victims (n = 539)		Total	
	M Obs/Exp	F Obs/Exp	No.	%
January	23/24	5/4	28	5
February	34/31	3/6	37	7
March	45/45	8/8	53	10
April	47/48	10/9	57	11
May	54/51	7/10	61	11
June	20/28	13/5	33	6
July	35/33	4/6	39	7
August	7/10	5/2	12	2
September	63/59	7/11	70	13
October	31/32	7/6	38	7
November	45/47	11/9	56	10
December	51/46	4/9	55	10
Total	455	84	539	100

χ^2 (Yates corrected) = 23.00
p = <0.05

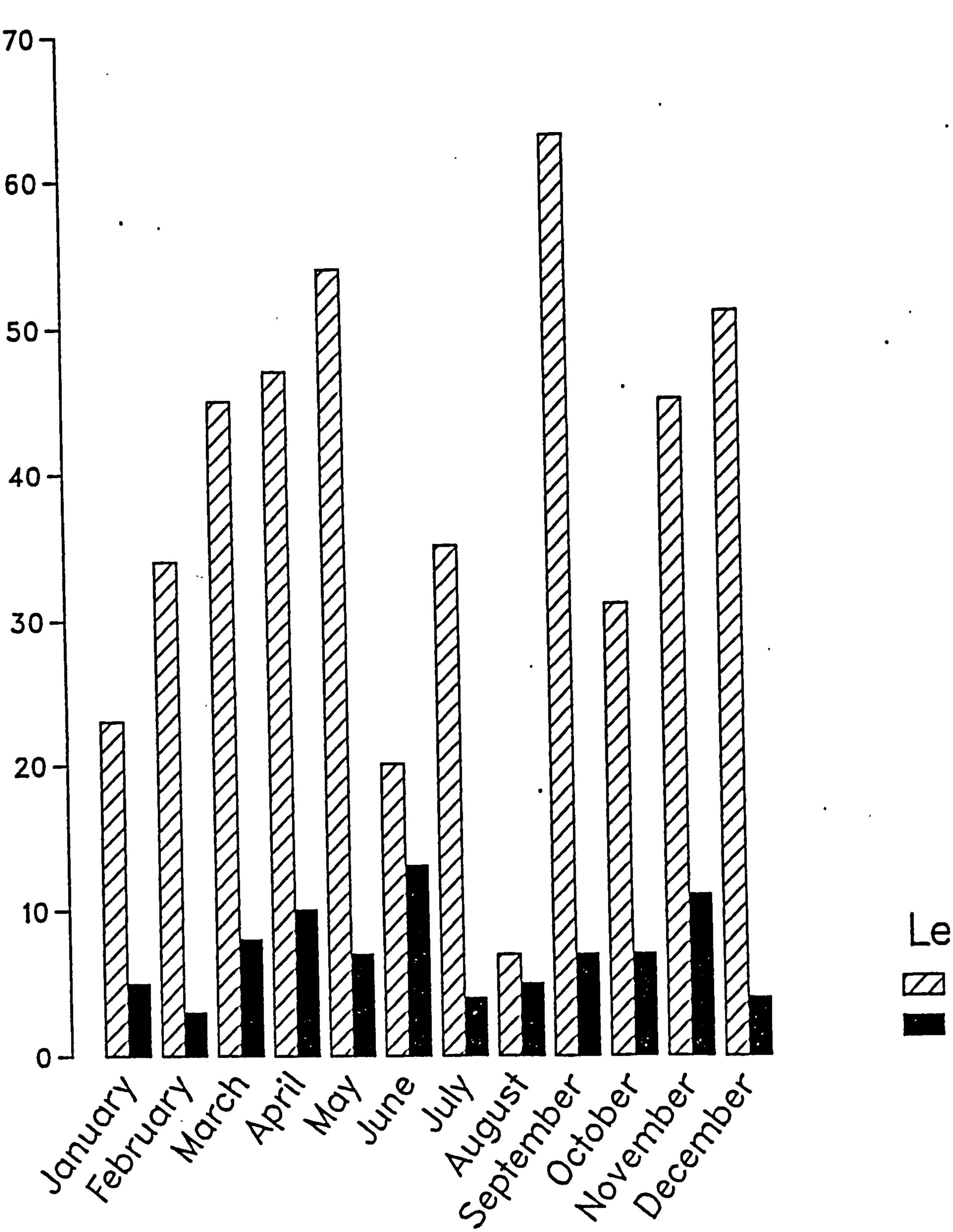

FIGURE 5.1(c): Time of assault by month of year

TABLE 5.2(a): Location of Assault by Electoral Ward ‡

Electoral Ward	No. of Victims (n = 517)		Total	
	M Obs/Exp	F Obs/Exp	No.	%
Avon	1/1	0/0	1	0
Bedminster	11/9	0/2	11	2
Bishopston	1/1	0/0	1	0
Bishopsworth	16/19	6/3	22	4
Brislington	9/11	4/2	13	3
Cabot	115/107	12/20	127	25
Clifton	19/18	2/3	21	4
District	15/18	6/3	21	4
Durdham	1/1	0/0	1	0
Easton	7/12	7/2	14	3
Eastville	4/3	0/1	4	1
Henbury	1/1	0/0	1	0
Hengrove	14/13	2/3	16	3
Horfield	1/1	0/0	1	0
Knowle	23/20	1/4	24	5
Redland	6/6	1/1	7	1
Somerset	6/7	2/1	8	2
Southmead	2/2	0/0	2	0
Southville	6/6	1/1	7	1
St. George E.	8/7	0/1	8	2
St. George W.	4/3	0/1	4	1
St. Philip	55/50	4/9	59	11
St. Pauls	58/65	19/12	77	15
Stapleton	1/3	2/0	3	1
Stockwood	11/9	0/2	11	2
Westbury	3/4	2/1	5	1
Windmill Hill	7/8	3/2	10	2
Outside Bristol	31/32	7/6	38	7
Total	436	81	517	100

χ^2 (Yates corrected) = 53.5
$p = <0.05$

TABLE 5.2(b): Precise Location of Assault

Place of Assault	No. of Victims (n = 514)		Total	
	M Obs/Exp	F Obs/Exp	No.	%
Vehicle*	27/25	3/5	30	6
Club	84/75	6/15	90	18
Pub	80/74	8/14	88	17
Street	126/120	17/23	143	28
At home	49/71	36/14	85	17
Shop/library/ cafe/restaurant/ hotel/office	25/22	5/4	30	6
Sports ground/ cinema/party/ theatre	22/19	0/3	22	4
Other location	18	8	26	5
Total	431	83	514	100

* car or public transport

χ^2 (Yates corrected) = 73.75
p = <0.001

TABLE 5.3: Alleged Reason For Assault‡

Reason	No. of Victims (n = 453)		Total	
	M Obs/Exp	F Obs/Exp	No.	%
Road traffic dispute	12/13	2/3	14	3
Revenge	13/13	2/2	15	3
Retaliation	22/21	3/4	25	6
Domestic argument	9/34	32/7	41	9
Argument elsewhere	43/42	7/8	50	11
Response to insult	9/8	1/2	10	2
Assailant intoxicated	12/12	2/2	14	3
Assailant bored	2/2	0/0	2	0
Victim obstructed assailant	6/5	0/1	6	1
Assailant obstructed victim	12/10	0/2	12	3
Football hooliganism	8/7	0/1	8	2
Fights over females/males	24/26	7/5	31	7
Intervention in existing altercation	39/37	5/7	44	10
Racially motivated violence	4/3	0/1	4	1
Robbery	44/47	12/9	56	12

table continued overleaf

TABLE 5.3 continued

Reason	No. of Victims (n = 453)		Total	
	M Obs/Exp	F Obs/Exp	No.	%
Mistaken identity	5/4	0/1	5	1
Unprovoked	109/97	7/19	116	26
Total	373	80	453	100

χ^2 (Yates corrected) = 142.4
p = <0.001

TABLE 5.4: Activity at the Time of Assault ǂ

Reported Activity*	No. of Victims (n = 478)		Total	
	M Obs/Exp	F Obs/Exp	No.	%
Arguing	21/33	18/6	39	8
Dancing	9/8	1/2	10	2
Drinking	65/57	3/11	68	14
Driving	13/12	1/2	14	3
Entering	11/12	3/2	14	3
Leaving	63/63	11/11	74	15
Sport	9/8	0/1	9	2
Standing	64/64	12/12	76	16
Talking	25/25	8/8	33	7
Walking	88/87	15/16	103	22
Working	32/32	6/6	38	8
Total	400	78	478	100

* Excludes rarely reported activities such as begging, chasing, eating, pushing car, protecting and restraining

χ^2 (Yates corrected) = 40.67

$p = < = 0.05$

CHAPTER 6

ASSAILANTS

6.1 Numbers of Assailants

Reported numbers of assailants involved in an incident are presented in Table 6.1. Most assaults were reported to involve one assailant (48% of incidents), although females reported injury at the hands of one assailant more often than expected compared with males. Conversely, more men than expected reported more than one assailant ($p = <0.001$), and only 9% of females reported more than 3 assailants, though 34% of males did so.

6.2 Age of Assailants

Estimated mean ages are recorded in Table 6.2(a). Most assailants were estimated by victims to be between 15 and 34 years of age (89%), although 10% were thought to be over 44 years, and one assailant was reported to be more than 60 years. Seven assailants (1% of total assaults) were estimated to be under 15 years. Fewer females than expected estimated assailants to be between 15 and 24 years of age, but more than expected over 25 years. Conversely, males reported more assailants as being aged between 15 and 24 years ($p = <0.05$). A comparison between ages of victims and assailants is presented in Table 6.2(b). More 10-19- year-old victims than expected reported that their assailants were of the same age, but fewer victims who were over the age of 35 years reported assailants aged 10-19 years than expected. Similarly, 20-24-year-olds mostly reported that their assailants were in this age group, and fewer assailants than expected

were aged 10-19 or over 35 years. Victims aged between 25-34 years reported assailants aged 10-19 years much less often than expected, but aged over 20 years more often than expected. Victims over 35 years reported assailants over the age of 25 years more often than expected. These differences were highly significant ($p = <0.001$).

6.3 Gender of Assailants

Gender of assailants is given in Table 6.3. Males were reported to be assailants in 94% of incidents, females in 4%, and both in 2%. Seven males and 10 females reported assaults by females. More female victims than expected reported assaults by other females, and conversely, fewer males than expected reported assaults by females. More males reported assaults by other males, and less assaults by females than expected ($p = <0.001$).

6.4 Racial Group of Assailants

Racial group of assailants is presented in Table 6.4(a). 74% of victims reported assaults by white assailants, and 19% by blacks. 4% reported assaults by groups of white and black assailants. A tendency towards more assaults of females by blacks (and fewer assaults of males) was found, but this was not statistically significant ($p = 0.087$). No female victims reported assaults by groups of white and blacks, however, though 22 males did so. A comparison of racial grouping of both victims and assailants is given in Table 6.4(b).

Though most white victims reported white assailants, fewer than expected reported black assailants. Similarly, black victims reported

black assailants more often than expected, and white assailants less often ($p = <0.0001$).

6.5 Relationship of Assailant to Victim

Relationships between victims and assailants are presented in Table 6.5(a).

Most male victims had no previous relationship or acquaintance with their assailants (71%), but this applied to only 25% of female victims. Many more females than expected reported that their assailant was a 'friend' (42%) compared with males (6%), and more females (17%) than males (<1%) had been assaulted by a spouse or ex-spouse. Females (8%) were less likely than males (14%) to report an assault by an 'acquaintance' ($p = <0.001$). Similarly, many more females (but fewer males) than expected knew the names of their assailants ($p = <0.0001$) (Table 6.5(b)).

The pilot study suggested that 'bouncers' in public houses and clubs might be responsible for a disproportionate number of injuries, but only 28 male victims (6%) and no females reported assault by this group (Table 6.5(c)).

6.6 Discussion

As was stated in Chapter 5, victims' accounts of assaults may not be accurate, and this inaccuracy may extend to descriptions of assailants. Interviews with victims are, however, the only source of information about most assaults, three-quarters of assaults in this study were not recorded by the police. Further, despite the possibly unreliable nature of information given by victims, interviews have

formed the basis of much research in the past, including the British Crime Survey [Hough and Mayhew, 1983]. Interpretation of data must, however, be subject to this reservation.

In contrast to women, only 22% of whom reported more than one assailant, 62% of male victims reported multiple assailants. Though no data were collected concerning numbers of people supporting the eventual victim in an assault or fight, these findings may explain many of the victims' comments about being 'overwhelmed' (Section 11.1). The literature contains no comparable investigations, and the results of this aspect of the study can therefore only act as base-line data for comparison with future research.

It has been stated that one of the functions of formal boxing in clubs and schools was to instil values concerning 'fair' fighting [Robins and Cohen, 1978], and it may be the case that assaults from multiple assailants are becoming more frequent, secondary to the relaxation of these 'rules'.

Victims and assailants appeared to be of the same age where the victim was aged between 15 and 34 years, but more older victims reported that their assailants were younger than themselves. This finding supports that of the BCS [Hough and Mayhew, 1983], which also concluded that the individuals who most resembled the victims were their assailants. Clustering of assailants estimated to be aged 15-24 years was also a finding of a study of persons convicted of wounding in 1984 in England and Wales [Walmsley, 1986]. This similarity suggests that victims' estimates of the age of assailants is at least to some extent reliable. The finding that women were assaulted by males who were older than themselves is not surprising, given that assailants were often their male partners [Gayford, 1975]. In this study, females were the assailants in only 4% of assaults, 3% being

directed against other women, and the Home Office review of violence occurring in 1984 found that only 7% of convicted offenders were women.

Data relating to the racial background of assailants demonstrated no differences between male and female victims, though white victims were proportionately more likely to report white assailants, and black victims were more likely to report black assailants. This may reflect the partially separated black and white communities within the hospital catchment population. Interestingly, although whites outnumbered blacks in the hospital catchment area by 50:1 (based on birthplace of head of household, and assuming that all assailants originating from the New Commonwealth, Pakistan and the 'Rest of the World' were described by victims as 'black' - see Table 4.2(a)), black assailants were reported in 1 in every 5 assaults, which suggests that 'blacks' are involved as assailants in a disproportionately large number of violent incidents. This calculation depends on several questionable assumptions, however, and further work is required to refute or confirm these findings. Clearly, however, Accident and Emergency Department-based research may be a fruitful source of information concerning racially-motivated violence, especially in view of the paucity of police information in this area [Home Office, 1981; Hough and Mayhew, 1983].

Male and female victims had very different relationships with their assailants prior to assaults; three-quarters of women knew their assailant and, of these, 60% were male 'friends' and a further 23% were the victims' spouse or ex-spouse. In contrast, assailants were largely unknown to male victims. These findings emphasise the importance, particularly in the treatment of women, of obtaining an adequate social history and arranging adequate care by social workers and other

appropriate agencies; in the majority of cases, assault directed against a woman indicates a breakdown in a principal relationship.

The pilot study suggested that public house and discotheque 'bouncers' might be responsible for a great deal of injury. At first sight, the data suggest that this is not the case, but when this group is compared with others responsible for keeping order in the inner city (i.e. the police), bouncers do seem to cause substantial, and possibly unnecessary, injury. In this study, bouncers were reported to have caused injury by 28 victims, whereas only two victims reported assaults by the police.

TABLE 6.1: Numbers of Assailants

No. of Assailants	No. of Victims (n = 503)		Total	
	M Obs/Exp	F Obs/Exp	No.	%
1	161/188	64/37	225	45
2–3	118/108	11/21	129	26
4–6	90/79	4/15	94	19
7–10	28/26	3/5	31	6
>10	24/20	0/4	24	5
Total	421	82	503	100

χ^2 (Yates corrected) = 41.85
p = <0.001

TABLE 6.2(a): Estimated Mean Age(s) of Assailants

Estimated Age of Assailants (yrs)	No. of Victims (n = 463)		Total	
	M Obs/Exp	F Obs/Exp	No.	%
10–14	4/6	3/1	7	1
15–19	126/118	15/23	141	30
20–24	153/145	21/29	174	38
25–34	81/86	22/17	103	21
35–44	19/26	11/4	40	9
45–60	4/6	3/1	7	1
>60	0/1	1/0	1	0
Total	387	76	463	100

χ^2 (Yates corrected) = 29.70
p = <0.05

TABLE 6.2(b): Ages of Victims and Assailants

Age of Victims (yrs)	Age of Assailants (yrs) 10–19	20–24	25–34	>35	Total	
	No. of Victims				No.	%
	Obs/Exp	Obs/Exp	Obs/Exp	Obs/Exp		
10–19	72/41	40/48	12/29	4/11	128	28
20–24	31/40	57/47	30/28	6/10	124	27
25–34	20/40	51/47	37/28	16/10	124	27
>35	24/27	25/32	24/19	12/7	85	18
Total	147	173	103	38	461	100

χ^2 (Yates corrected) = 62.5
p = >0.001

TABLE 6.3: Gender of Assailants ‡

Gender(s)* of Assailant(s)	No. of Victims (n = 463)		Total	
	M Obs/Exp	F Obs/Exp	No.	%
Female	7/14	10/3	17	4
Females + Males	1/2	1/0	2	0
Male	422/413	69/78	491	94
Males + Females	9/10	3/2	12	2
Total	439	83	522	100

* 'females + males' indicates a preponderance of females, and 'males + females' indicates a preponderance of males

χ^2 (Yates corrected) = 27.16

p = <0.001

TABLE 6.4(a): Racial Group of Assailants ‡

Racial Group of Assailant(s)*	No. of Victims (n = 463) M Obs/Exp	F Obs/Exp	Total No.	%
White	307/301	53/59	360	74
Black	67/78	26/15	93	19
Whites + Blacks	17/14	0/3	17	3
Blacks + Whites	5/4	0/1	5	1
Others	11/12	1/0	12	2
Total	407	80	487	100

* 'whites + blacks' indicates a preponderance of whites, and 'blacks + whites' indicates a preponderance of blacks

χ^2 (Yates corrected) = 14.62
p = NS

TABLE 6.4(b): Racial Group of Victims and Assailants

Racial Group of Victims	Racial Group of Assailants: White*	Black**	Total	
	Number of Assailants (n = 470)		No.	%
	Obs/Exp	Obs/Exp		
White	368/360	84/92	452	96
Black	6/14	12/4	18	4
Total	374	96	470	100

* 'white' includes groups of assailants where whites reportedly outnumbered blacks

** 'black' includes groups of assailants where blacks reportedly outnumbered whites

χ^2 (Yates corrected) = 21.8
p = <0.0001

TABLE 6.5(a): Relationship of Victim and Assailant

Relationship	No. of Victims (n = 490)		Total	
	M Obs/Exp	F Obs/Exp	No.	%
Acquaintance	60/64	6/22	66	13
Friend	24/38	32/18	56	11
Neighbour	7/5	0/2	7	1
Spouse/ex-spouse	3/11	13/5	16	3
Other	25/21	6/8	31	6
Unknown	295/246	19/56	314	64
Total	414	76	490	100

χ^2 (Yates corrected) = 47.70
p = <0.001

TABLE 6.5(b): Identity of Assailant

Name of Assailant Known to Victim	No. of Victims (n = 463)		Total	
	M Obs/Exp	F Obs/Exp	No.	%
Yes	78/111	54/21	132	26
No	350/317	28/61	378	74
Total	428	72	510	100

χ^2 (Yates corrected) = 78.42
p = <0.0001

TABLE 6.5(c): Assault by 'Bouncers'

Assault by Bouncer	No. of Victims (n = 463)		Total	
	M Obs/Exp	F Obs/Exp	No.	%
Yes	28/24	0/4	28	5
No	413/417	84/80	497	95
Total	497	84	525	100

χ^2 (Yates corrected) = 4.45
p = <0.01

CHAPTER 7

ALCOHOL AND ASSAULTS

7.1 Alcohol Intake

Alcohol intake in the 12-hour period immediately prior to the assault is presented in Table 7.1(a). 149 victims (31%) reported no alcohol consumption immediately prior to the assault (58% of females, but 26% of males). Thus, 69% of victims had taken some alcohol, and 26% (30% of males and 4% of females) had consumed more than 10 units. 23 males (6%) had consumed more than 20 units, and 8 (2%) more than 30 units. The proportion of very heavy drinkers (>30 units' consumption) was the same among both males and females, but otherwise, comparative abstinence by women and excessive intake by men was statistically significant ($p = <0.001$).

Victims' blood ethanol and stated recent alcohol intake are compared in Table 7.1(b). 77% of 363 victims consented to blood alcohol testing (not instituted until 1st April 1986). Of 100 victims reporting no previous intake, only 4 showed any evidence of ethanol in the blood. Conversely, of those 180 victims reporting recent alcohol intake, 76% demonstrated evidence of blood ethanol, though tests were not sensitive enough to detect levels between 0 and 5mg/100ml (see Section 3.3.6). 86% of patients who reported recent intake, but who demonstrated no evidence of blood ethanol, had taken less than 10 units and had not undergone blood sampling until some hours after the assault (mean time lapse in these victims = 7 hours, range 3-15 hours, see Table 7.1(d)), allowing time for alcohol metabolism. Victims who reported excessive intake generally demonstrated high blood ethanol levels, and those reporting a low intake demonstrated low blood lev-

els. This tendency was highly significant ($p = <0.0001$), indicating a positive correlation between stated intake and blood ethanol level, even without taking time-lapse between assault and blood sampling into account. This was confirmed when the correlation coefficient was calculated ($r = 0.699$) (see Figure 7.1(a)). Comparison between estimated blood ethanol levels 30 minutes after assault (assuming metabolism at the rate of 15mg/100ml/hour [Walls and Brownlie, 1985]) and stated recent intake is presented in Table 7.1(c). Correlation was slightly poorer than with uncorrected blood alcohol levels ($r = 0.628$) (Figure 7.1(b).

116 victims (22%) were interviewed and examined less than 1 hour after the assault, and a further 244 (45%) within 3 hours. 37 victims (7%) were interviewed more than 72 hours after the assault. 51% of men were interviewed within 2 hours of assault, but only 32% of women. Conversely, only 21% of men were interviewed 5 hours or more after assault compared with 34% of women (Table 7.1(d)).

Details of weekly alcohol intake are set out in Table 7.1(e). 17% of victims reported habitual abstinence (31% of females, 15% of males), but 13% of males and 1% of females reported intake in excess of 50 units weekly. No female victims reported intake exceeding 100 units, compared with 3% (10) males. These differences were statistically significant ($p = <0.001$). Mean intake for male drinkers was 30 units, and for female drinkers 11 units.

Correlation between weekly alcohol intake and gamma glutamyl transferase (γ-GT) levels is presented in Table 7.1(f). No victim stating habitual abstinence demonstrated abnormal γ-GT levels, and only 2 who reported an intake of between 1 and 10 units (both males) demonstrated excessive levels. Light drinkers were more likely to demonstrate normal levels of γ-GT. Conversely, more heavy drinkers

(>26 units per week) demonstrated excessive γ-GT levels, and fewer than expected demonstrated levels within normal limits. This difference was statistically significant ($p = <0.01$). γ-GT levels were compared with alcohol intake immediately prior to assault to assess the immediate effect of alcohol on the liver (Table 7.1g). There was no significant difference between observed and expected numbers of victims, indicating a lack of influence of recent alcohol intake on γ-GT levels.

Table 7.1(h) presents data concerning the proportion of net weekly income spent on alcohol (assuming the average cost of 1 unit to be 50p). 133 (35%) victims spent less than 10% of net income on alcohol, and mean proportion was 14%. 40 victims (9%), however, spent more than 50% of net income on alcohol, and 10 (2%) apparently spent more than the whole of their stated income on alcohol.

Comparison of male victims' weekly alcohol intake with weekly intake of male drinkers in regions of England and Wales with high and low risk of alcohol-related illness is set out in Table 7.1(i).

Habitual alcohol consumption in victims and those in high-risk areas for alcohol-related illness was similar in the 20-24 years age group, but consumption by victims exceeded that in high-risk areas in older age groups, and this was most marked in the 45-54 age group, where victims' consumption was more than twice the average consumption in high-risk areas.

Comparison of male victims' alcohol consumption immediately prior to assault with consumption per occasion of male drinkers in high- and low-risk regions is given in Table 7.1(j). The proportion of victims who drank more than 8 units prior to assault was very similar to the proportion of drinkers in high-risk areas who drank more

than 8 units during at least one drinking session per week, but higher than in low-risk areas.

7.2 Gamma-glutamyl Transferase

Gamma-glutamyl transferase (γ-GT) levels are presented in Table 7.2. Levels were within normal limits in 84% of males and 74% of females. Thus, levels were abnormally high in 16% of males and 26% of females, though numbers of females were small. One female victim and 6 males demonstrated γ-GT levels twice the maximum normal value (females >64IU/litre; males >134IU/litre).

7.3 Discussion

In this study, reported recent alcohol consumption was checked by measuring blood alcohol [Holt et al, 1980], and habitual intake was checked by measuring gamma-glutamyl transferase levels (γ-GT) [Kristensen et al, 1980]. A broad correlation was found between alcohol intake and blood levels; for example, only 2% of victims who reported consuming no alcohol had evidence of alcohol in the blood. Similarly, high habitual intake was associated with abnormally high γ-GT levels. These data therefore provide objective evidence that true consumption was, in fact, recorded, though of course 23% of patients refused testing. The possible reasons for this refusal include that victims had not reported true consumption; that they planned to drive home despite excessive alcohol intake; or possibly that they thought that drug abuse might be detected.

Interestingly, the correlation between blood alcohol levels and stated intake was closer when 'back-tracking' was omitted (to estimate

blood alcohol levels soon after assault). The explanation for this may be that previous food intake made these calculations unreliable [Hanagon et al, 1979], or that absorption from the stomach was not complete by 30 minutes after the assault, and blood levels continued to rise after this time. These and other drawbacks of back-calculation are well recognised [Walls and Brownlie, 1985; Lewis, 1987]. A further reason why 'uncorrected' alcohol levels were more accurate may have been that the interval between assault and blood sampling was short in most cases (70% of victims were tested within 3 hours), allowing time for metabolism of only small amounts of ethanol in the liver.

It is easy to assume that victims of assault have been drinking alcohol, and bring assault on themselves. However, although there is a relationship between the degree of intoxication and the severity of injury (see Table 9.3(e)), and three-quarters of males had been drinking, more than half the female victims and one quarter of males had taken no alcohol. This assumption therefore seems to be unjustified, especially concerning women. Of course, this investigation did not include an assessment of assailants. Previous studies have confirmed a high incidence of intoxication of assailants [Gosnold, 1978; Collins, 1982; Light, 1986]. In an assault involving males, it is therefore likely that either the assailant or the victim, or both, will be intoxicated, especially if groups of assailants are involved. The literature reveals no comparative studies of victims and assailants which include assessment of the role of alcohol, though such a study seems possible, given collaboration between hospitals and the police.

Comparison of weekly alcohol intake in young male assault victims (aged 20-24 years) with intake in the population at large indi-

cates that assault victims consumed amounts similar to drinkers in areas with a high risk of alcohol-related disease [Breeze, 1985]. In older males, however, habitual intake of assault victims exceeded that of males of the same age in high-risk areas. When recent intake of assault victims is considered, it is apparent that 'binge' drinking is associated with assault in younger men, but that victimisation is associated with regular heavy drinking, and probably also dependence, in older men. Overall, 25% of women and 40% of male victims habitually exceeded current Health Education Council 'safe' levels of consumption [Health Education Council, 1984], and it is therefore important that this group of patients is screened for alcohol-related disorders, and that assault is seen as a presenting sign of excessive consumption, again particularly with regard to men, and especially those over 25 years of age [Yates et al, 1987]. The results of this study suggest that health education should be concerned with preventing excessive 'binge' drinking, as well as with excessive habitual intake - the main emphasis in the past.

Incidence of intoxiation of victims was similar to that demonstrated in previous British studies, though in Salford 60% of victims were intoxicated (69% of 539 victims in the present study) and in Glasgow 80% of male victims who also had head injuries were intoxicated [Galbraith et al, 1976; Yates et al, 1987]. Comparison of levels of expenditure on alcohol by assault victims and the adult population in general [Central Statistical Office, 1985] indicates that victims' expenditure on alcohol is about 33% higher than that of the rest of the population (mean proportion of expenditure = 10% by victims and 7.5% by all adult consumers).

Most of the evidence in this study concerning alcohol thus points towards an association between assault and excessive intake,

whether in 'binge' or habitual drinking. γ-GT levels are also consistent with this view. 16% of men and, surprisingly, 26% of women (though numbers were small) had abnormally high levels. Though there are many reasons for increased levels in elderly patients [Whitehead et al, 1978], the likely cause in younger persons is alcohol abuse. These data suggest, however, that almost half of female victims who drank consumed an excessive and damaging amount of alcohol. Therefore alcohol-induced liver damage should be strongly suspected in these patients particularly, and steps taken to reduce consumption.

TABLE 7.1(a): Alcohol Intake in 12 Hours Prior to Assault‡

Alcohol Intake (Units)	No. of Victims (n = 487) M Obs/Exp	F Obs/Exp	Total No.	%
0	105/126	44/23	149	31
1-5	73/76	17/14	90	18
6-10	109/102	12/19	121	24
11-15	65/57	2/10	67	14
16-20	36/30	0/6	36	7
21-30	15/13	0/2	15	3
>30	8/8	1/1	9	2
Total	411	76	487	100

χ^2 (Yates corrected) = 37.59
p = <0.001

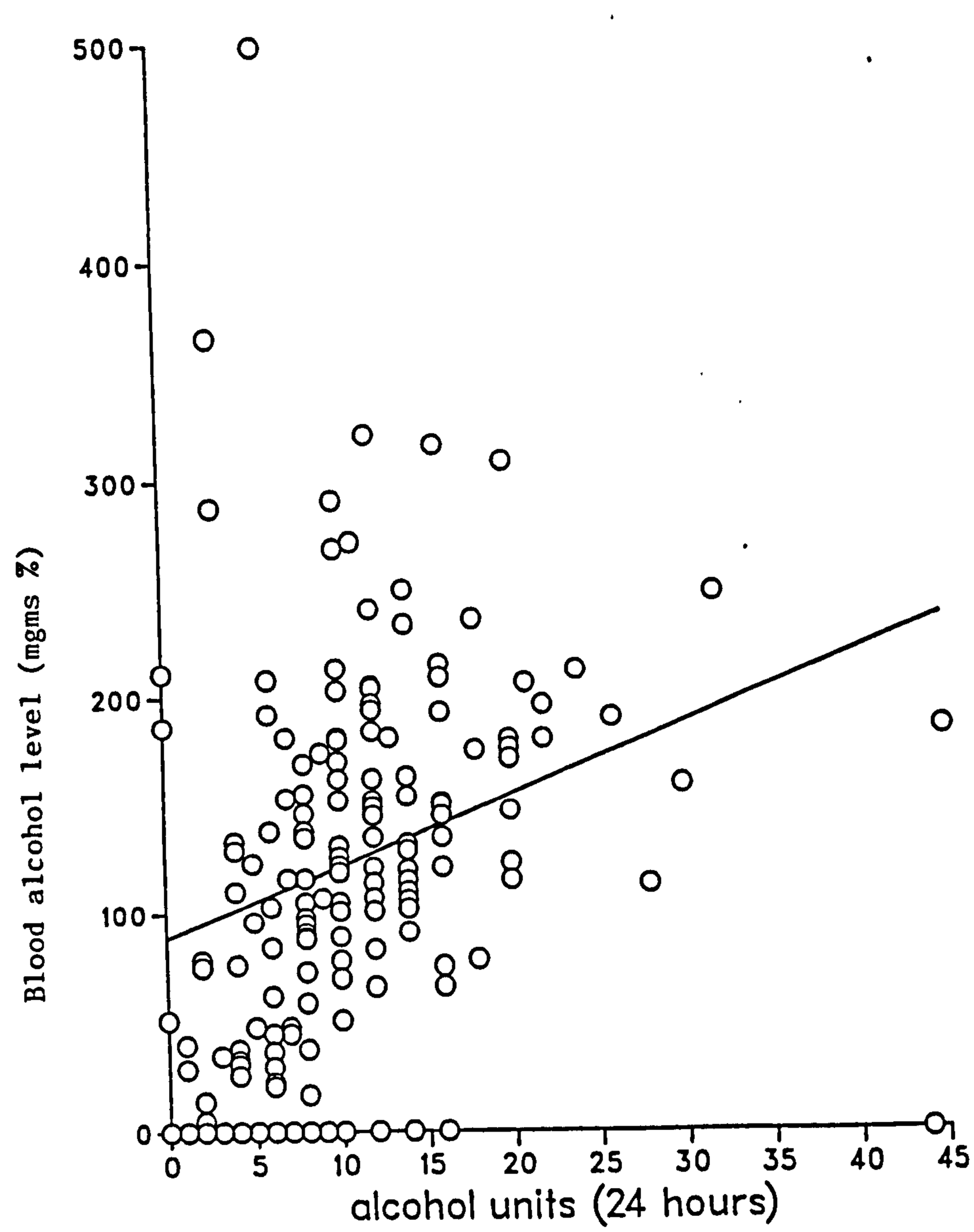

FIGURE 7.1(a): Blood alcohol level (mg/100ml) by recent alcohol intake (units consumption in 12 hours preceding assault)

TABLE 7.1(b): Blood Ethanol by Stated Recent Intake

Stated Recent Intake (Units)	No. of Victims (n = 280*) (Obs/Exp) Blood Ethanol (mg/100ml)				Total	
	<5	5-80	81-160	>160	No.	%
0	96/49	2/12	0/21	2/18	100	36
1-5	24/22	13/5	5/9	2/8	44	16
6-10	12/33	15/8	26/14	14/12	67	24
11-14	4/18	1/4	18/8	13/6	36	13
15-20	1/11	3/3	8/5	11/4	23	8
>21	1/4	0/0	2/3	7/3	10	1
Total	138	34	59	49	280	100

* Blood testing commenced 1/4/86

χ^2 (Yates corrected) = 193.38
p = <0.0001

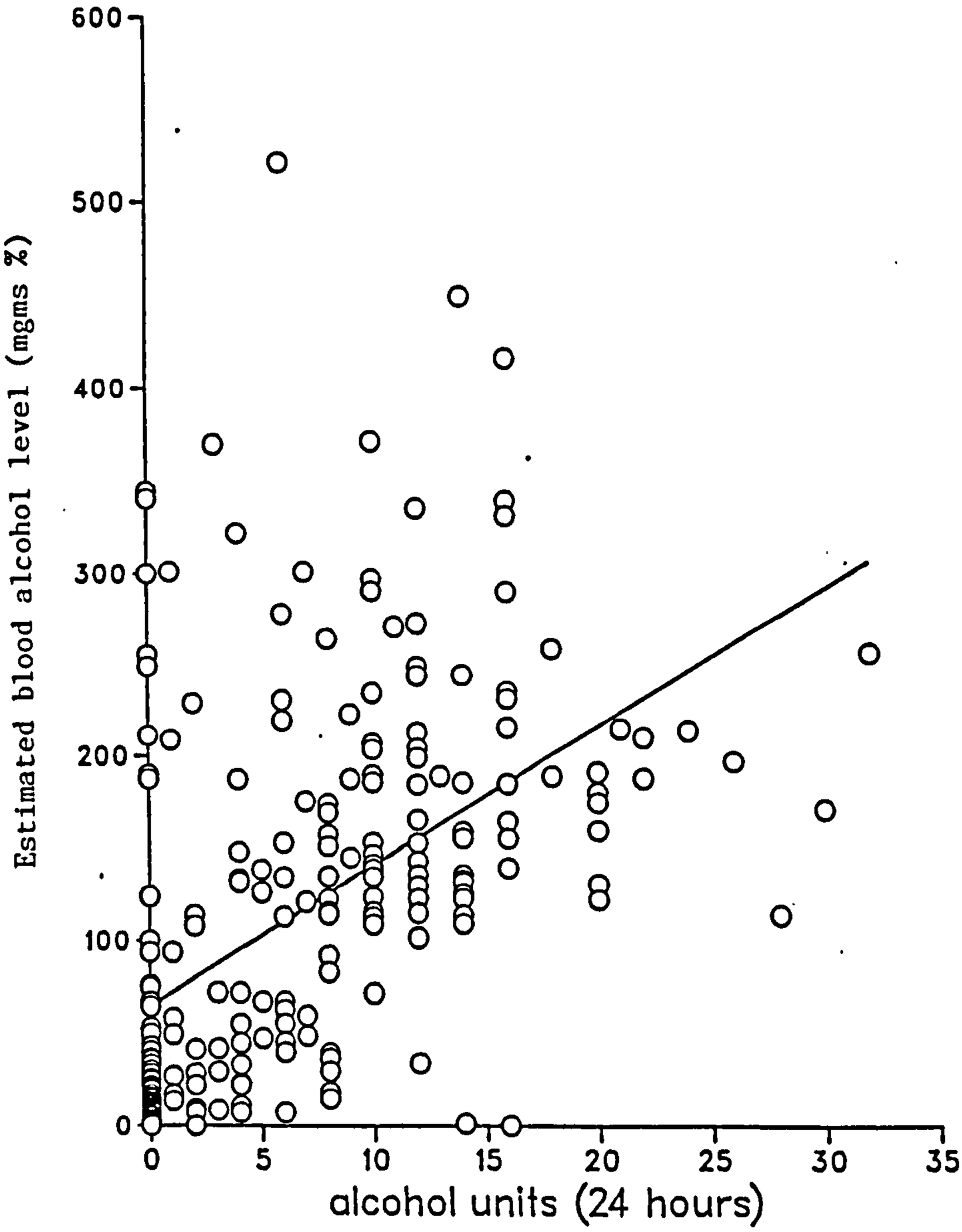

FIGURE 7.1(b): Estimated blood alcohol level (mg/100ml) at 30 minutes after assault by recent intake (units of alcohol in previous 12 hours)

TABLE 7.1(c): Comparison of Blood Ethanol Levels 30 Minutes After Assault (estimated) and Stated Recent Intake*

* assuming ethanol metabolism of 15mg/100ml blood/hour [Walls and Brownlie, 1985] and assuming that absorption of ethanol was complete by 30 minutes after assault, and that victims took no further alcohol after assault [Walls and Brownlie, 1985])

Recent Intake (Units)	No. of Victims (n = 280) Blood Ethanol (mg/100ml)				Total	
	<5	5-80	81-160	>160	No.	%
0	96	2	0	2	100	36
1-5	25	13	5	2	45	16
6-10	11	12	26	14	63	23
11-14	4	1	20	13	38	14
15-20	0	1	8	11	20	7
>21	0	0	4	10	14	5
Total	136	29	63	52	280	100

TABLE 7.1(d): Time Lapse Between Assault and Interview/Blood Sampling

Time Lapse (Hours)	Number of Victims (n = 539)					
	M		F		Total	
	No.	%	No.	%	No.	%
Unknown	43	9	11	13	51	9
0–1	103	23	13	15	116	22
1.01–2	127	28	14	17	141	26
2.01–5	86	19	17	20	103	19
5.01–12	16	4	8	10	24	4
12.01–24	25	5	7	8	32	6
24.01–72	25	5	7	8	32	6
>72	30	7	7	8	37	7
Total	455	100	84	100	539	100

TABLE 7.1(e): Weekly Alcohol Intake of Victims‡

Weekly Intake (Units)	Number of Victims (n = 448)			
	M	F	Total	
	Obs/Exp	Obs/Exp	No.	%
0	56/65	21/12	77	17
1–10	82/94	29/17	111	25
11–25	115/109	13/19	128	29
26–50	80/71	3/12	83	18
51–100	38/33	1/6	39	9
>100	10/9	0/1	10	2
Total	381	67	448	100

χ^2 (Yates corrected) = 32.32
p = <0.001

TABLE 7.1(f): Correlation Between Weekly Alcohol Intake and γ-GT Levels

Stated Alcohol Intake (Units)	Number of Victims (n = 197*) γ-GT Levels (IU/litre) (Observed/Expected)			Total	
	0–35	36–70	>71	No.	%
0	19/15	13/12	0/4	32	16
1–10	30/23	16/19	2/7	48	24
11–25	27/27	22/22	9/8	58	29
26–60	15/18	15/15	8/5	38	19
>51	2/10	10/8	9/4	21	11
Total	93	76	28	197	100

* Blood sampling commenced on 1/4/86

χ^2 (Yates corrected) = 43.09

p = <0.01

TABLE 7.1(g): Comparison of γ-GT Levels and Recent Alcohol Intake ǂ

Recent Intake (units)	γ-GT Levels (IU/100ml) (Number of Victims n = 208) Observed/Expected				Total	
	0-35	36-70	71-140	>140	No.	%
none	32/34	19/21	1/6	0/2	52	25
1-5	18/19	18/16	3/4	2/1	41	20
6-10	22/25	20/21	9/6	2/2	53	25
11-20	22/24	20/20	7/5	3/2	52	25
21-30	3/3	2/3	2/0	0/0	7	3
>30	0/1	3/1	0/0	0/0	3	1
Total	97	82	22	7	208	100

χ^2 (Yates corrected) = 18.57
p = NS

TABLE 7.1(h): Proportion of Net Income Spent on Alcohol

Proportion of Income	Number of Victims (n = 367)	%
0	48	13
1-10	133	36
11-20	64	17
21-30	42	11
31-40	24	7
41-50	16	4
51-60	8	2
61-70	9	2
71-80	4	1
81-90	5	1
91-100	4	1
>101	10	2
Total	367	100

TABLE 7.1(i): Weekly Alcohol Intake of Victims and All Male Drinkers, by Region and Age

Age (Years)	Average Weekly Intake (Units of Alcohol)		
	Victims	High-risk Region*	Low-risk Region*
20–24	32	32	30
25–34	29	23	18
35–44	38	23	20
45–54	48	20	15

* Indicators of risk based on death rates for cirrhosis of the liver, rate of admission to psychiatric hospital where diagnosis was alcohol dependence or alcohol psychosis and rate of conviction for drunkenness (other than motoring offences) [Breeze, 1985]

TABLE 7.1(j): Alcohol Consumption Per Occasion

			High Risk Region		Low Risk Region	
	All Male Victims	Male Victims Aged 18–29	All Men	Men Aged 18–29	All Men	Men Aged 18–29
Percentage of drinkers consuming more than 8 units per occasion at least once weekly*	42	55	45	54	35	31

* >8 units immediately preceding assault in victims

TABLE 7.2: Gamma-glutamyl Transferase

γ-GT Level* (IU/litre)	No. of Victims	%
8-32 (females)	17	74**
8-67 (males)	160	84**
Total	177	83**
33-64 (females)	5	22
68-134 (males)	24	13
Total	29	14
>64 (females)	1	4
>134 (males)	6	3
Total	7	3

* Normal range 8-32IU/litre (females) 8-67IU/litre (males)

** γ-GT levels within normal limits

CHAPTER 8

CHARACTERISTICS OF ASSAULTS

8.1 Blows Sustained

The estimated number of blows sustained is presented in Table 8.1(a). 32% could not recall the number of blows, but 25% of victims reported being struck only once, and a further 17% twice or 3 times. 25% reported more than 4 blows, and 7% more than 10. The mean number of blows was 5 in men and 4 in women. There were no significant differences between males and females with regard to number of blows or the incidence of a fall during the assault (see Table 8.1(b)). 58% of both males and females fell over during the assault, following which 33% allegedly sustained further blows (26% of men, but 32% of women). There were no significant differences between males and females with regard to estimated numbers of blows sustained after a fall (Table 8.1(c)), though 125 victims (25%) could not recall whether, or how often, they had been struck again.

Of 290 victims who fell, 110 (38%) reported that the injuries for which they sought hospital treatment occurred beforehand, and 55 (19%) reported that these injuries occurred as a result of, or after a fall, although 125 (43%) did not know.

8.2 Weapons

Details of weapons allegedly used by assailants are presented in Table 8.2(a). Fists (72% of assaults) and feet (42% of assaults) were the most commonly used 'weapons', though blunt weapons (18%), glasses (11%) and other sharp weapons (6%) were also used. The head was used

as a weapon in 4% of assaults, but only 2 victims reported the use of firearms. Teeth, 'the body', an aerosol and hot fluids were also used as weapons. There was a significant difference between males and females with regard to glasses and other sharp weapons. Male victims reported the use of these weapons more often than expected, and females less often ($p = <0.05$). Females also tended to report being kicked proportionately less than males, but to report the use of fists more often. The use of more than one weapon was reported by 48% of victims (51% of males, 63% of females) (see Table 8.2(b)). 29% reported the use of both fists and feet (30% of males, 21% of females) and 8% of males (1% of females) reported the use of fists, feet and a blunt weapon.

Details of the weapons used by male and female assailants are presented in Table 8.2(c). Though females were reported to be assailants in only 19 (4%) assaults, a significant difference was found with regard to the use of fists and sharp weapons, with female assailants using fists less often and sharp weapons (other than glass) more often than expected ($p = <0.05$).

The use of various weapons in different situations is considered in Table 8.2(d).

In clubs, fists and feet together were the most commonly used 'weapons' and, in pubs, drinking glasses were most commonly used. In contrast, fists alone were predominant in assaults occurring in the street and at home, though in the street a combination of fists and feet was also frequently reported. In clubs, the use of blunt and sharp weapons and fists alone was reported less commonly than expected, but a combination of fists and feet and the use of glass more commonly than expected. In pubs, glass was used much more commonly than expected, but fewer sharp weapons of other types. In the home,

blunt and sharp weapons and fists were used proportionately more often than expected, in contrast to a combination of fists and feet and glass, which were used less frequently ($p = <0.0001$).

8.3 Police Involvement

The incidence of police involvement prior to hospital attendance is presented in Table 8.3(a).

56% of males and 52% of females reported police awareness of the assault prior to attendance at hospital, and of those reporting that the police were not aware, 90% of males and 80% of females said that they planned to inform the police (see Table 8.3(b)). No significant difference between males and females was found, with respect either to previous police involvement or intention to involve them after leaving hospital. Recording of offences occurring within the boundaries of 'A' Division, Avon and Somerset Constabulary, is presented in Table 8.3(c).

23% of assaults occurring within 'A' Division boundaries had been recorded by the police (range 15-33%), and there was no significant difference between electoral wards in respect of incidence of police recording.

In respect of assault location, a significant difference in recording was found. Fewer assaults occurring in the street and in clubs were recorded than was expected, and more in public houses ($p = <0.05$).

No significant differences in recording of offences were found with regard to hour of day (Table 8.3(e)) or weapons allegedly used (Table 8.3(f)). More offences occurring on Wednesdays (35%) were recorded than expected, however, but less on Saturdays (12%) ($p =$

<0.05) (see Table 8.3(g)). 35% of assaults where victims were women were recorded - more than expected compared with assaults following which men sought hospital treatment, where only 21% were recorded (Table 8.3(h).

8.4 History of Previous Assault

Data concerning previous assaults are presented in Table 8.4(a). 43% of victims (43% of females, 45% of males) reported at least one previous assault, and 27% reported involvement in more than two previous assaults. 26 males (7%) reported more than 10 previous assaults. No significant difference was detected between males and females. A significant difference was detected, however, between employed and unemployed victims with regard to experience of previous assault. More unemployed victims than expected (58%) reported at least one previous assault, compared with only 38% of employed victims. Further, 44% of unemployed victims reported more than two previous assaults; this applied to only 22% of employed victims ($p = <0.01$) (see Table 8.4(b)).

Past experience of assault of individuals in different socio-economic groups is presented in Table 8.4(c). More victims in Groups 2, 4, 6 and 7 (employers, professional employees, clerical and sales and personal service workers, and managers in small establishments) than expected reported no previous assault, but fewer victims in Groups 9 and 10 (skilled and semi-skilled manual workers). Fewer victims in Groups 6 and 7 than expected (clerical, sales and personal service workers) reported one previous assault, but more victims in Group 9 (skilled manual workers). By contrast, proportionately more victims in Group 10 (semi-skilled manual workers) reported more than 3

assaults, but fewer victims in Group 6 (clerical and sales workers). Taken together, however, these differences were not statistically significant ($p = 0.27$). With regard to social class (Table 8.4(d)), more Class 2 (intermediate occupations) victims than expected reported no previous assault, and fewer Class 4 (partly-skilled occupations) victims. In contrast, fewer Class 1 and 2 victims reported 2 or more assaults, compared with victims in Class 4. Proportionately more Social Class 3m (skilled manual occupations) victims reported only one previous assault, and fewer victims in Social Classes 3n and 4 (skilled non-manual and partly-skilled occupations). Overall, these differences were statistically significant ($p = <0.05$).

Numbers of victims who reported the need for hospital treatment following previous assault are presented in Table 8.4(e). Although there was a tendency for males to report previous hospital treatment more often, and females less often, than expected, this difference was not significant. 37% of males and 27% of females reported previous hospital treatment following assault.

8.5 Discussion

These results suggest that many victims cannot be relied upon to remember the number of blows sustained during an assault; 32% were not able even to estimate the number. This limits the validity of data interpretation, though one-quarter of patients reported only one blow, and a further quarter reported between 2 and 6 blows. It seems likely that those who could not remember had sustained multiple blows, though even this is a questionable assumption, given that some patients could have been rendered unconscious by a single blow. The unreliability of this measure of severity of assault was confirmed when the number of

blows was compared with overall number of injuries, when a low correlation was found (Table 9.1(f)). For example, one third of patients who reported a single blow had more than one injury (though some of these may have been due to falling after being struck). Clearly, there is a need for an accurate measure of severity of injury, but this investigation suggests that the reported number of blows is an unreliable indicator.

A higher proportion of victims could recall whether they fell over during the assault. One-fifth of victims were struck again following a fall, and one victim in 10 reported more than four subsequent blows. This practice of 'hitting a man when he's down' may be an indication of the relaxation of informal 'rules' concerning violence [Robins and Cohen, 1978], particularly in relation to attacks directed against women (in this study, one quarter of women reported being struck after they had fallen). Despite the reservations expressed above, studies of victims' experiences in assault may give valuable information about changing patterns of violent behaviour in terms of what is considered 'fair'.

Surprisingly, there are few or no reported studies of the use of various weapons in Accident and Emergency Department patients, though the forensic literature contains many accounts of post-mortem findings [Gordon and Shapiro, 1975]. The present study suggests that weapons are used in approximately one third of assaults, and that kicking, punching and head butts are employed in two-thirds of assaults. Firearms were the cause of injury in only two victims. Interestingly, 12% of males were injured by broken drinking glasses. Compared with previous research into the use of various weapons, which has been mostly concerned with homicide, fewer victims in this study were attacked with knives, fewer with firearms, and about the same proportion with

blunt weapons [Walmsley, 1986]. This contrast highlights that the limitation on the availability and possession of knives and firearms affects severity of injury in assault (though this study has not been concerned with murder, manslaughter or suicide). Beer and lager glasses were used as weapons almost twice as often as sharp weapons, and research should therefore also be directed towards improving the design and properties of these glasses to limit injury. There is clearly an argument for improving legislation in this area, particularly in relation to public houses and clubs (rather than private homes where glasses, at least in this study, were used as weapons less often).

Interestingly, the use of weapons varied according to the gender of assailant (although numbers of female assailants were small); proportionately more women used sharp weapons and glasses, and fewer caused injury with fists. Two-thirds of female assailants used a weapon, but only one-fifth of males did so. Presumably this reflects that a woman is unlikely (or feels that she is unlikely) to injure a male protagonist unless she is armed with a weapon of some kind.

Only one quarter of assaults in this study were recorded by the police, though just over half the victims reported that the police had been aware of the incident. Further, almost all victims who said that the police were unaware of the assault said that they intended to report the offence. Previous research indicates that the reporting of an offence is unlikely if it does not occur within the first 15 minutes [Shapland et al, 1985]. In the present study, all victims either thought that they required hospital treatment, or were taken straight to hospital. This may explain the low recording rate, though it is striking that this is almost identical to the estimate of unrecorded violence contained in the BCS [Hough and Mayhew, 1983]. It is almost

certain that the victims surveyed in this study were the most seriously injured, in that they all visited hospital, and it is unfortunate that the recording was so low, given that victims support agencies obtain their information almost solely from the police [Maguire and Corbett, 1987]. On the evidence of this investigation, victims support schemes should liaise closely with Accident and Emergency Departments, as well as with the police.

The police recorded proportionately fewer assaults which occurred in the street and in clubs, but proportionately more which occurred in public houses. This may reflect that police access to public houses is easier, or that bar staff call the police more often than occurs in clubs, where 'bouncers' traditionally keep order. It seems surprising, however, that though so many assaults took place in these locations, and were presumably witnessed by bar staff, the police recorded less than 30% of incidents. This may reflect a reluctance on the part of discotheque staff, or victims, to inform the police. With issues of confidentiality in mind, it is extremely unlikely that hospital staff would inform the police of an assault unless requested to do so, and this, coupled with the time necessary to complete treatment, makes it unlikely that the victim will report an offence after his arrival at hospital.

Proportionately more assault was recorded on a Wednesday and less on a Saturday. This indicates that, as far as violent crime is concerned, the policing of central Bristol was comparatively inadequate on Saturdays. There were no significant differences in recording rate with regard to type of weapon, though there was a tendency for more assaults to be recorded where sharp weapons had been used. Perhaps, then, the pressing need for medical treatment made recording unlikely, whatever the cause of injury. Recording was also more likely if the

victim was female. In the inner city area policed by the 'A' Division of the Avon and Somerset Constabulary, most assault which was directed against women occurred in public houses, discotheques and in the street, rather than at home. The higher rate of recording may reflect more public concern when a woman in injured. Because the other Bristol police Divisions did not record 'woundings' separately, it was not possible to investigate the recording of domestic assault, which occurred mainly in outlying residential areas. It seems probable that hospital records are an accurate measure of this important problem, though there appear to have been no previous attempts to tap this source of information.

Almost half the victims in this study had been injured in at least one previous assault, and one quarter had been injured in more than two previous assaults. 1 in 4 males and 1 in 3 females had previously received hospital treatment after an assault. These findings indicate that assaults which necessitate hospital treatment are often not isolated incidents, and that advice and counselling on the avoidance of future assault may therefore be worthwhile. In the absence of police involvement in 75% of cases, hospital staff are the only possible coordinators of this important task. It is therefore incumbent upon medical and nursing staff to provide advice, to refer victims to victim support schemes or social workers, and to ensure that the patient's medical practitioner is informed.

Data from this study suggest that the unemployed are more likely to have been assaulted before, and that previous experience of assault is also greater among skilled manual workers. These findings are consistent with those in Chapter 4, where it was concluded that proportionately more unemployed persons and skilled manual workers were assaulted compared with the hospital catchment population.

TABLE 8.1(a): Number of Blows Sustained

No. of Blows	No. of Victims (n = 539)		Total	
	M Obs/Exp	F Obs/Exp	No.	%
1	112/113	22/21	134	25
2-3	79/80	15/14	94	17
4-6	53/56	13/10	66	12
7-10	29/26	2/5	31	6
>10	35/33	4/6	39	7
unknown	147/144	28/31	175	32
Total	455	84	539	100

χ^2 (Yates corrected) = 2.40
p = NS

TABLE 8.1(b): Falls

Fall During Assault	No. of Victims (n = 503)		Total	
	M Obs/Exp	F Obs/Exp	No.	%
Yes	244/244	46/46	290	58
No	180/180	33/33	213	42
Total	424	79	503	100

χ^2 (Yates corrected) = 0.00
p = NS

TABLE 8.1(c): Blows After a Fall

No. of Blows	No. of Victims (n = 378) M Obs/Exp	F Obs/Exp	Total No.	Total %
0*	236/233	41/44	277	73
1-3	40/42	10/8	50	13
>4	42/38	9/7	51	13
Total	318	60	378	100

* includes 88 victims who did not fall

χ^2 (Yates corrected) = 3.10
p = NS

TABLE 8.2(a): Type of Weapon ‡

Weapon	No. of Victims (n = 510)*		Total	
	M Obs/Exp	F Obs/Exp	No.	%
Blunt	81/79	11/13	92	18
Sharp (excluding glasses)	34/29	3/8	33	6
Glass	51/45	4/10	55	11
Fist	303/309	63/58	366	72
Feet	187/180	26/33	213	42
Head	21/19	1/3	22	4
Gun	1/2	1/0	2	0
Other**	6	4	10	2
Total	429	81	510	100

* 239 (47%) of victims reported assault with >1 weapon (range 2-4)

** includes hot fluids (2 assaults), teeth (2 assaults), aerosol (1 assault), 'body' (1 assault)

χ^2 (Yates corrected) = 26.36
p = <0.05

TABLE 8.2(b): Use of Multiple Weapons

Weapon	No. of Victims (n = 505)				Total	
	M		F			
	No.	%	No.	%	No.	%
Blunt only	51	12	6	7	57	11
Fist only	105	25	36	44	141	28
Feet only	14	3	5	6	19	4
Glass only	22	5	3	4	25	5
Firearm only	1	0	1	1	2	0
Head only	8	2	0	0	8	2
Sharp only	18	4	1	1	19	4
Fist + feet	127	30	18	21	145	29
Fist/feet/blunt	16	8	1	1	17	3
Fist/feet/glass	12	3	0	0	12	2
Fist/feet/head	5	1	1	1	6	1
Fist/feet/sharp	4	1	0	0	4	1
Fist/blunt	6	1	3	4	9	2
Fist/glass	12	3	1	1	13	3
Fist/head	5	1	0	0	5	1
Fist/sharp	6	1	2	2	8	2
Combinations reported by <3 victims	13	3	4	5	17	3
Total	424	100	81	100	505	100

TABLE 8.2(c): Weapons by Gender of Assailant*

(* includes assaults where more than one weapon was reported)

Weapon(s)	Gender of Assailant**		Total	
	M	F	No.	%
	Obs/Exp	Obs/Exp		
Blunt	54/55	4/3	58	9
Fist	348/338	3/13	351	52
Fist/feet	176/176	2/2	178	26
Sharp	31/35	5/1	36	5
Glass	49/52	3/1	53	8
Total	658	17	676	100

** Includes groups of assailants (groups predominantly female categorised as female, and groups predominantly male categorised as male)

χ^2 (Yates corrected) = 84.47
p = <0.05

TABLE 8.2(d): Weapons by Location of Assault (no. of victims n = 339)

Location	Type of Weapon					Total	
	Blunt O/E	Fists/Feet O/E	Fist O/E	Glass O/E	Sharp O/E	No.	%
Club	4/10	41/25	19/25	13/9	1/5	78	23
Pub	10/10	21/24	20/24	22/8	1/5	74	22
Home	12/9	13/23	26/23	4/8	11/5	66	19
Street	22/15	36/39	36/38	12/14	15/8	121	36
Total	48	111	101	51	28	339	100

O/E = observed/expected

χ^2 (Yates corrected) = 56.6
p = <0.0001

TABLE 8.3(a): Police Involvement Prior to Hospital Treatment

Police Involvement	No. of Victims (n = 519)		Total	
	M Obs/Exp	F Obs/Exp	No.	%
Yes	245/242	43/46	288	55
No	191/194	40/37	231	45
Total (%)	436 (56)	83 (52)	519	100

χ^2 (Yates corrected) = 0.38
p = NS

TABLE 8.3(b): Stated Intention of Victims to Inform Police

Intention to Inform Police	No. of Victims (n = 231)		Total	
	M Obs/Exp	F Obs/Exp	No.	%
Yes	170/172	32/30	202	87
No	21/22	8/7	29	13
Total (%)	191 (90)	40 (80)	231	100

χ^2 (Yates corrected) = 0.01
p = NS

TABLE 8.3(c): Police Recording of Assaults (by Electoral Ward)

Assault District (Electoral Ward)*	Offence Recorded (No. of Victims n = 281)				Total	
	Yes Obs/Exp	(%)	No Obs/Exp	(%)	No.	%
Cabot	31/29	(24)	96/98	(76)	127	45
Easton	5/3	(33)	10/12	(67)	15	5
St. Philip	9/14	(15)	51/46	(85)	60	21
St. Pauls	19/18	(23)	60/61	(77)	79	28
Total	64	(23)	217	(77)	281	100

* Electoral wards making up 'A' Division, Avon and Somerset Constabulary

χ^2 (Yates corrected) = 2.22
p = NS

TABLE 8.3(d): Police Recording of Assaults by Assault Location

Location*	Offence Recorded (No. of Victims n = 244)		Total	
	No Obs/Exp	Yes Obs/Exp	No.	%
Motor vehicle	3/5	3/1	6	2
Club	63/60	14/17	77	32
Home	19/21	8/6	27	11
Pub	30/33	13/10	43	18
Street	78/71	13/20	91	37
Total	193	51	244	100

* All assaults occurred within 'A' Division boundaries

χ^2 (Yates corrected) = 11.72
p = <0.05

TABLE 8.3(e): Recording of Offences by Hour of Day

Hour of Day	Offence Recorded (No. of Victims n = 276)		Total	
	No Obs/Exp	Yes Obs/Exp	No.	%
1901–1100	5/6	2/1	7	3
1101–1400	11/14	6/3	17	6
1401–1700	15/14	4/5	19	7
1701–1900	9/10	3/2	12	4
1901–2100	13/16	7/4	20	7
2101–2200	17/18	6/5	23	8
2201–2300	25/25	7/7	32	12
2301–2400	33/33	10/10	43	15
0001–0100	48/43	7/12	55	20
0101–0200	21/19	4/6	25	9
0201–0900	14/14	4/4	18	7
Total	211	60	276	100

χ^2 (Yates corrected) = 8.82
p = NS

TABLE 8.3(f): Recording of Offences by Weapon

Weapon*	Offence Recorded (No. of Victims n = 266)		Total	
	No Obs/Exp	Yes Obs/Exp	No.	%
Blunt	32/33	10/9	42	11
Fist/feet	79/75	18/22	97	25
Fist	149/143	37/43	186	48
Glass	28/28	8/8	36	9
Sharp	13/17	10/6	23	6
Total	312	74	384	100

* Excluding offences occurring outside 'A' Division boundaries

χ^2 (Yates corrected) = 5.44
p = NS

TABLE 8.3(g): Recording of Offences by Day of Week

Day of Week*	Offence Recorded (No. of Victims n = 281)		Total	
	No Obs/Exp	Yes Obs/Exp	No.	%
Monday	13/14	5/4	18	6
Tuesday	16/16	5/5	21	7
Wednesday	15/18	8/5	23	8
Thursday	25/22	4/7	29	10
Friday	47/52	20/15	67	24
Saturday	76/66	10/20	86	31
Sunday	25/29	12/8	37	13
Total	217	64	281	100

* Excluding offences occurring outside 'A' Division boundaries

χ^2 (Yates corrected) = 10.64
p = <0.05

TABLE 8.3(h): Recording of Offences by Gender of Victim

Gender of Victim*	Offence Recorded (No. of Victims n = 281)		Total	
	No Obs/Exp	Yes Obs/Exp	No.	%
Male	189/184	49/54	228	85
Female	28/33	15/10	43	15
Total	217	64	281	100

* Excluding offences occurring outside 'A' Division

χ^2 (Yates corrected) = 3.46
p = <0.05

TABLE 8.4(a): Previous Assault

No. of Previous Assaults	No. of Victims (n = 463)		Total	
	M Obs/Exp	F Obs/Exp	No.	%
0	217/224	48/41	265	57
1	62/62	11/11	73	16
2-3	45/41	4/8	49	11
4-6	22/22	4/4	26	6
7-10	19/19	3/3	22	5
>10	26/24	2/4	28	6
Total	391	72	463	100

χ^2 (Yates corrected) = 3.65
p = NS

TABLE 8.4(b): Previous Assault by Employment Status

No. of Assaults	No. of Victims (n = 453)				Total	
	Employed Obs/Exp	(%)	Unemployed Obs/Exp	(%)	No.	(%)
0	217/200	(62)	48/65	(42)	265	(58)
1	57/55	(16)	16/18	(14)	73	(16)
2-3	29/37	(8)	20/12	(2)	49	(11)
4-6	15/20	(4)	11/6	(10)	26	(6)
7-10	14/17	(4)	8/5	(7)	22	(5)
>10	17/21	(5)	11/7	(10)	28	(6)
Total	349	(100)	114	(100)	463	(100)

χ^2 (Yates corrected) = 22.52
p = <0.001

TABLE 8.4(c): Previous Assault by Socio-economic Group of Victims ‡

No. of Ass-aults	Socio-economic Group (No. of Victims n = 440)									Total	
	0 O/E	2 O/E	4 O/E	5 O/E	6 O/E	7 O/E	9 O/E	10 O/E	11 O/E	No.	%
0	82/90	14/10	13/10	27/25	31/26	14/11	45/51	15/18	11/11	252	68
1	23/25	2/3	3/3	7/7	3/7	1/3	20/14	5/5	4/3	68	
2-3	21/17	0/2	1/2	5/4	5/5	1/2	8/9	3/3	2/2	46	12
>3	32/27	1/1	1/1	3/3	6/8	3/3	17/17	9/6	2/3	74	20
Total	158	17	18	42	45	19	90	32	19	440	100

χ^2 (Yates corrected) = 27.69
p = NS

TABLE 8.4(d): Previous Assault by Social Class of Victims

No. of Assaults	Social Class* (No. of Victims n = 275)						Total	
	1 O/E	2 O/E	3m O/E	3n O/E	4 O/E	5 O/E	No.	%
0	12/10	42/32	62/66	31/28	24/26	11/10	182	60
1	3/3	9/9	24/18	5/8	6/8	4/3	51	17
>1	2/5	6/15	30/32	12/12	16/11	24/5	71	23
Total	17	57	116	49	46	19	304	100

* Excludes housewives, school-children and the unemployed (149 victims)

χ^2 (Yates corrected) = 29.09
p = <0.05

TABLE 8.4(e): Hospital Treatment After Previous Assault

Hospital Treatment After Previous Assault	No. of Victims (n = 528)		Total	
	M Obs/Exp	F Obs/Exp	No.	%
Yes	164/157	23/30	187	35
No	280/287	61/54	341	65
Total	444	84	528	100

χ^2 (Yates corrected) = 2.42
p = NS

CHAPTER 9

TYPE, PATTERN AND SEVERITY OF INJURIES IN ASSAULT

9.1 Type of Injury

The incidence of haematomas, lacerations and fractures is presented in Table 9.1(a).

Haematomas were found in 281 out of 455 males (62%), and in 72 out of 85 females (85%). 320 males (70%) and 34 females (40%) suffered lacerations, while 110 males (24%) and 29 females (35%) suffered at least one fracture. The incidence of injury in males and females was significantly different; males suffered unexpectedly more lacerations than females, who suffered proportionately more haematomas ($p = <0.01$). Total numbers of injuries are presented in Table 9.1(b), and numbers of haematomas in Table 9.1(c), lacerations in Table 9.1(d) and fractures in Table 9.1(e).

36% of victims had a single injury, 54% between 2 and 5 injuries, and 10% more than 5 injuries. There was no significant difference between males and females with regard to total number of injuries.

55% of all victims sustained at least one haematoma (53% of males, but 69% of females), and 26% sustained two or more haematomas (26% of males, but 36% of females). Thus more females than expected sustained haematomas compared with males, and females also sustained multiple haematomas more frequently. These differences were statistically significant ($p = <0.05$). Incidence of lacerations also varied according to gender of victim; 67% of males, but only 35% of females, sustained at least one laceration. Whilst 24% of males suffered more

than one laceration, this applied to only 8% of females. These differences were highly statistically significant ($p = <0.001$).

139 victims sustained at least one fracture (26%), 110 males (24%) and 29 females (34%). Thus 74% had no bony injury, and although there were proportionately more females with fractures, this was not statistically significant.

A comparison of the reported number of blows and numbers of injuries is set out in Table 9.1(f).

There was little correlation between numbers of blows and numbers of injuries (correlation coefficient $r = 0.33$) (Figure 9.1(f)), and 32% of victims reporting only one blow sustained more than one injury. 70% of victims reporting 2-5 blows also had 2-5 injuries, but only 20% of victims reporting more than 5 blows sustained more than 5 injuries; 65% of these victims had between 2 and 5 injuries.

Type of injury is related to weapon in Table 9.1(g). 80% of victims reporting the use of sharp weapons had lacerations, though 20% had only haematomas or fractures. 57% of victims reporting assaults with blunt weapons sustained lacerations, as did 30% of victims who were allegedly kicked, 35% who were allegedly punched, and 33% who were allegedly both kicked and punched. Fractures followed the use of fists and feet more often than expected (but not feet alone), and less often following the use of blunt or sharp weapons. The correlation between injury and weapon was illustrated by both the χ^2 statistic ($p = <0.001$) and the correlation coefficient ($r = 0.74$). When only victims reporting the use of a single weapon (i.e. excluding those reporting attacks with more than one weapon) were considered, a close association between type of weapon and type of wound was also found ($p = <0.001$).

9.2 Pattern of Injuries

The distribution of haematomas, lacerations and fractures is presented in Table 9.2(a). 83% of all fractures, 66% of all lacerations and 53% of all haematomas affected the face. The upper limb was the next most injured region (14% of all injuries), followed by the thorax (8% of injuries) and other head and neck injuries (8%). The abdomen was least affected (2% of injuries). More facial bone fractures and fewer facial haematomas than expected were found, and an unexpectedly large number of lacerations of the head and neck (other than the face) and upper limb ($p = <0.0001$).

The distribution of haematomas, lacerations and fractures in males and females is set out in Tables 9.2(b), 9.2(c) and 9.2(d). More males, but fewer females than expected, had facial haematomas; but fewer males (and more females) had upper and lower limb injuries ($p = <0.01$). There was a disproportionately large number of lower limb haematomas in females.

Similarly, more males and fewer females than expected had facial lacerations, and more females than expected had lower limb lacerations - although there was no difference with regard to the upper limb. The overall pattern of lacerations in males and females was significantly different ($p = <0.01$).

There were no differences between males and females with regard to the incidence of fractures at the various sites. Fractures are also categorised in Table 9.2(e). Nasal fractures were most commonly seen (27%), followed by zygomatic fractures (22%), mandibular angle fractures (12%) and mandibular body fractures (12%). The bones most commonly fractured after the facial bones were the phalanges (6%). Le Fort pattern fractures (1%) were rarely seen, and there were no spinal, femoral, scapular or pelvic fractures.

Distribution of facial injuries is presented in Table 9.2(f). 49% of facial injuries affected the middle third, 28% the lower third, and 23% the upper third. 38% of injuries were left-sided, 33% central, and 29% right-sided. Most injuries were recorded in the centre left zone (19%), and least in the upper central zone (4%). Distribution of injuries in males and females was similar, though males sustained proportionately more central middle third injuries and left middle third fractures than females ($p = <0.05$).

9.3 Severity of Injury

Severity of injury is presented in Table 9.3(a) (see also Section 3.3.7).

57% of victims had Category I injury (one laceration or one haematoma), 13% Category II injury (haematomas and/or lacerations), 4% Category III injury (one fracture), 20% Category IV injury (one fracture and laceration(s) and/or haematoma(s)) and 6% Category V injury (more than one fracture). There was no statistically significant difference between males and females with regard to severity of injury.

Severity of injury caused by various weapons is set out in Table 9.3(b). Blunt weapons caused more minor injuries than expected (Category I), and a combination of fists and feet caused proportionately more severe (Category IV) injury. Sharp weapons caused more multiple soft tissue injuries (Category II) than expected, but punching gave rise to fewer such injuries. Both blunt weapons and sharp weapons caused fewer isolated fractures combined with soft tissue injuries at other sites (Category IV) than expected, but fists and fists plus feet

were more likely to cause injury of this severity. These differences were statistically significant ($p = <0.05$).

Severity of injury is compared with alleged number of blows sustained in Table 9.3(c). Not surprisingly, more victims than expected (64%) suffered a single soft-tissue injury (Category I) after allegedly being struck only once, though 28% of these victims sustained multiple injuries (Categories II and IV). Conversely, few victims reporting more than 10 blows had only one soft-tissue injury. Overall, injury was progressively more severe as the alleged number of blows increased, so that victims reporting less than 3 blows were <u>less</u> likely to have a fracture, and those reporting more than 4 blows were <u>more</u> likely to have a fracture ($p = <0.05$). The relationship between falling during the assault and severity of injury is set out in Table 9.3(d).

Of those with the most severe injuries (Category V), fewer victims than expected reported falling over. By contrast, those victims with multiple soft-tissue injuries reported a fall more often than expected.

The relationship between alcohol intake preceding assault and severity of injury is presented in Table 9.3(e). More non-drinking victims than expected had minor (Category I) injury, but fewer victims who had consumed in excess of 10 units. Further, fewer non-drinking victims than expected had serious injury (Category V), whilst those drinking in excess of 10 units had more Category IV injuries than expected, and those drinking between 1 and 10 units more Category V injuries. This association between abstinence and less severe injury was statistically significant ($p = <0.05$).

9.4 Admission to Hospital

71 of 455 males (16%) were admitted to hospital, and 15 of 84 females (18%) (see Table 9.4(a)). This small difference was not statistically significant. Type of weapon made no significant difference to admission rates (Table 9.4(b)). Nevertheless, 26% of victims who reported being kicked during the assault were admitted, but only 12% who had been attacked with a blunt weapon, and only 14% who were attacked with fists. In addition, whilst 24% of victims assaulted with sharp weapons required admission, this applied to only 9% who were assaulted with drinking glasses.

There was no significant association between hospital admission and number of blows sustained (see Table 9.4(c)). The lack of a significant association between falling and hospital admission is demonstrated in Table 9.4(d), though there was a slight tendency for those who reported a fall to be admitted more often than expected. Recent alcohol intake also had no significant effect on hospital admission. Notwithstanding this, however, there was a tendency for fewer non-drinkers to be aditted than expected, and more victims reporting an intake of between 1 and 10 units (see Table 9.4(e)).

9.5 Discussion

Analysis of the type of injury in male and female victims demonstrated that proportionately more males had lacerations and that fewer males had haematomas compared with females. This finding is consistent with the cause of injury (Section 8.2, 'Weapons') in that proportionately more males reported assault with sharp weapons or drinking glasses. There are no comparable investigations reported in the literature, although Gayford [1975] reported that periorbital haematomas,

and the use of blunt instruments, were common in wife-battering. It may be that a male assailant tends to choose a blunt weapon in preference to a sharp one when assaulting a woman because he does not wish to cause permanent scarring, or because he believes that he does not need an 'offensive' weapon in a conflict with a woman because he is stronger. Conversely, this difference may reflect the fact that, in assaults involving only males, sharp weapons and glasses are used to gain advantage over an opponent of roughly equal strength. Gayford's study of battered wives [1975] is inconsistent in this respect. He suggests that males spontaneously use any weapon which is to hand, and cites saucepans and other kitchen utensils because many assaults take place there. Clearly though, there are other factors at work, because knives are also readily available in the kitchen, but are used infrequently. If the hypothesis that little or no injury is intended is correct, then Gayford's observation that husbands appear to be particularly polite and concerned when they bring their injured wives to hospital may simply reflect their true feelings, and not represent an attempt to conceal the cause of injury.

Although a higher proportion of female victims suffered a fracture, this was not statistically significant. However, this tendency may reflect the fact that a woman is more likely to sustain serious injury in an assault by a man because he is stronger, or possibly that a woman only attends hospital when she is seriously injured. This may also explain why proportionately fewer women attended with only haematomas. It has been reported that battered wives, in particular, are often prevented by their male partners from attending hospital [Gayford, 1975].

Interestingly, comparison of injury and type of weapon showed that attacks with fists, or a combination of fists and feet, gave rise

to fractures significantly more often than expected, compared even with attacks with blunt weapons (though, surprisingly, blunt weapons caused proportionately more lacerations). This may reflect the greater momentum of fists and feet compared with most blunt objects.

The results of this study indicate a preponderance of facial injuries in assault cases, though this was most obvious with regard to fractures and least obvious in relation to haematomas. There are few reported studies of the overall pattern of injury in adult assault victims, so that comparison with previous investigations is difficult. Only about 3% of road accident victims sustain facial bone fractures [DHSS, 1978], however, and injuries are much more evenly distributed in passengers not wearing seat belts [Christian, 1976] compared with victims of assault. In the present study, the upper limb was the second most common site of skeletal injury, after the facial bones, though this type of injury affected only 1 in 10 victims. The only other study in injuries in adult assault victims relates only to soft tissue injuries [Shepherd et al, 1987] but, again, a preponderance of facial wounds was found. In this and the present study, female victims had proportionately fewer facial injuries compared with males, but had more limb haematomas and lacerations. In the present study, fractures were equally distributed in males and females. These data indicate that the face is a preferred 'target' in assault, though this may not always represent a conscious preference. Of course, clothing provides some protection for the trunk and limbs, and this may partly explain the preponderance of facial injuries.

It may be the case that male assailants avoid striking the female face so that injuries will not be outwardly apparent, or for some deeper psychological reason. Upper limb injuries, second in frequency in this study, may reflect a tendency on the part of victims to defend

themselves by using their arms, or simply that victims struck their assailants and injured their own arms in doing so. This seems particularly likely in the case of phalangeal or metacarpal fractures. If this is the explanation, then the clear distinction between 'victim' and 'assailant' may be difficult.

In this study, the distribution of facial injuries was generally consistent with previous findings, though the obvious exception to this was the large number of nasal fractures. No previous UK study has demonstrated such a high incidence [e.g. Haidar, 1978; Hill et al, 1984], and explanations for this include that nasal fractures are traditionally treated by oto-rhino-laryngologists or plastic surgeons, rather than by oral surgeons, and that they are therefore not included in oral surgical surveys. In this study, mandibular fractures were the most frequent skeletal injury.

Traditionally, oral surgical research has been directed towards the identification of patterns of injury within the facial skeleton, though there seems little to be gained from this exercise. Clearly, surgical training should include management of all lower, middle and upper third injuries, and whether or not injury in one particular area of the face is more common than another seems to be immaterial from the surgical point of view - particularly when the whole skeleton is considered. The psychological factors underlying the reasons for the selection of each 'target' area are unknown, however, and it may be the case that zygomatic injuries, for example, are more likely to occur after provocative looks or glances (the eye being the target), or that lower third injuries follow verbal aggression (the mouth being the target). An investigation into the causes and importance of this behaviour might provide a useful insight into conduct during a fight or assault, and might even identify behaviour which has been 'learned'

from television and other media violence or televised contact sport (particularly boxing). It might be very valuable to match the use of beer glasses as portrayed on television with actual usage, or to match anatomical 'target areas' in television victims and real victims. This methodology does not appear to have been applied to research on the effects of television violence.

In this study, left-sided facial injuries were more frequent than right-sided at all three levels (i.e. upper, middle and lower), and this almost certainly reflects the fact that most assailants are right-handed [Shepherd et al, 1987]. Central facial injuries were the next most frequent, and right-sided injuries were least frequent. The only exception to this was that central upper third injuries were rare, but this probably reflects the fact that there is no obvious central 'target' in the upper third of the face compared with the symphysis and nose in the lower and mid-face. Interestingly, facial injuries were similarly distributed in both males and females, except that nasal injuries were less frequent in women. This may reflect the fact that many male assailants set out to avoid producing obvious nasal deformity in women, over and above their tendency to avoid striking the face in the first place.

Though it has previously been stated that the reported number of blows is an inaccurate measure of the severity of an injury (because many patients cannot remember this detail), the application of the injury severity scale demonstrates that in those who can remember, the number of blows broadly correlates with the outcome. For example, those reporting less than 3 blows were less likely to have a fracture, and those who reported more than 4 blows were more likely to have a fracture. There is therefore evidence to suggest that the longer an assault continues, the greater the likelihood of severe injury.

Interestingly, data concerning falls tend to confirm this: fewer of those who fell had multiple injuries compared with those who did not fall, who presumably sustained further blows, though if victims were subsequently kicked they were more likely to require admission.

The association between abstinence from alcohol and less severe injury may reflect that non-drinkers were more able to avoid blows, or that intoxicated persons tend to prolong an assault. This study therefore provides some evidence of a direct link between intoxication and aggression, though clearly this concerns victims rather than assailants. The evidence is not entirely convincing, however, in that drinkers were not significantly more likely to be admitted to hospital, although a tendency towards more admissions was apparent. In this study, 1 in 6 victims (84 in total) was admitted to hospital - a similar proportion to that described by Shapland et al [1985] in a study of victims known to the police. In an Accident and Emergency Department with 50,000 new patient attendances per annum, less than 2 admissions per week does not represent a substantial drain on resources, compared with other categories of patient. This admission rate emphasises, however, that a minority of patients are seriously injured, and admission rate is an important and easily obtained indicator of severity of injury.

TABLE 9.1(a): Type of Injury by Gender of Victim

Type of Injury	No. of Victims (n = 532)		Total	
	M Obs/Exp	F Obs/Exp	No.	%
Haematoma	281/297	72/56	353	42
Laceration	320/298	34/56	354	42
Fracture	110/117	29/22	139	16
Total	711*	135*	846*	100

* Includes victims with more than one type of injury

χ^2 (Yates corrected) = 17.19
p = <0.01

TABLE 9.1(b): Numbers of Injuries by Gender of Victim

Number of Injuries	No. of Victims (n = 530)		Total	
	M Obs/Exp	F Obs/Exp	No.	%
1	162/162	30/30	192	36
2-5	244/242	43/45	287	54
>5	41/43	10/8	51	10
Total	447	83	530	100

χ^2 (Yates corrected) = 0.70
p = NS

TABLE 9.1(c): Numbers of Haematomas by Gender of Victim

Number of Haematomas	No. of Victims (n = 530)				Total	
	M Obs/Exp	(%)	F Obs/Exp	(%)	No.	%
0	210/199	47	26/37	31	236	45
1	123/127	28	27/23	33	150	28
2–5	101/105	23	24/20	29	125	24
>5	13/16	3	6/3	7	19	2
Total	447	100	83	100	530	100

χ^2 (Yates corrected) = 9.31
p = <0.05

TABLE 9.1(d): Numbers of Lacerations by Gender of Victim ‡

Number of Lacerations	No. of Victims (n = 532)				Total	
	M Obs/Exp	(%)	F Obs/Exp	(%)	No.	%
0	149/171	33	54/32	64	203	38
1	192/180	43	22/34	26	214	40
2–5	99/89	22	7/17	8	106	20
>5	8/8	2	1/1	1	9	2
Total	448	100	84	100	532	100

χ^2 (Yates corrected) = 29.61
p = <0.001

TABLE 9.1(e): Numbers of Fractures by Gender of Victim

Number of Fractures	No. of Victims (n = 539)				Total	
	M Obs/Exp	(%)	F Obs/Exp	(%)	No.	%
0	345/338	76	55/62	65	400	74
1	84/90	18	23/17	27	107	20
2-5	26/27	6	6/5	7	32	6
Total	455	100	84	100	539	100

χ^2 (Yates corrected) = 3.36
p = NS

TABLE 9.1(f): Number of Injuries by Reported Number of Blows

No. of Blows	No. of Injuries (No. of Patients = 352)						Total	
	1	(%)	2-5	(%)	>5	(%)	No.	%
1	86	(68)	40	(31)	1	(1)	127	36
2-5	34	(28)	86	(70)	3	(2)	123	35
>5	16	(16)	66	(65)	20	(20)	102	29
Total	136		192		24		352	100

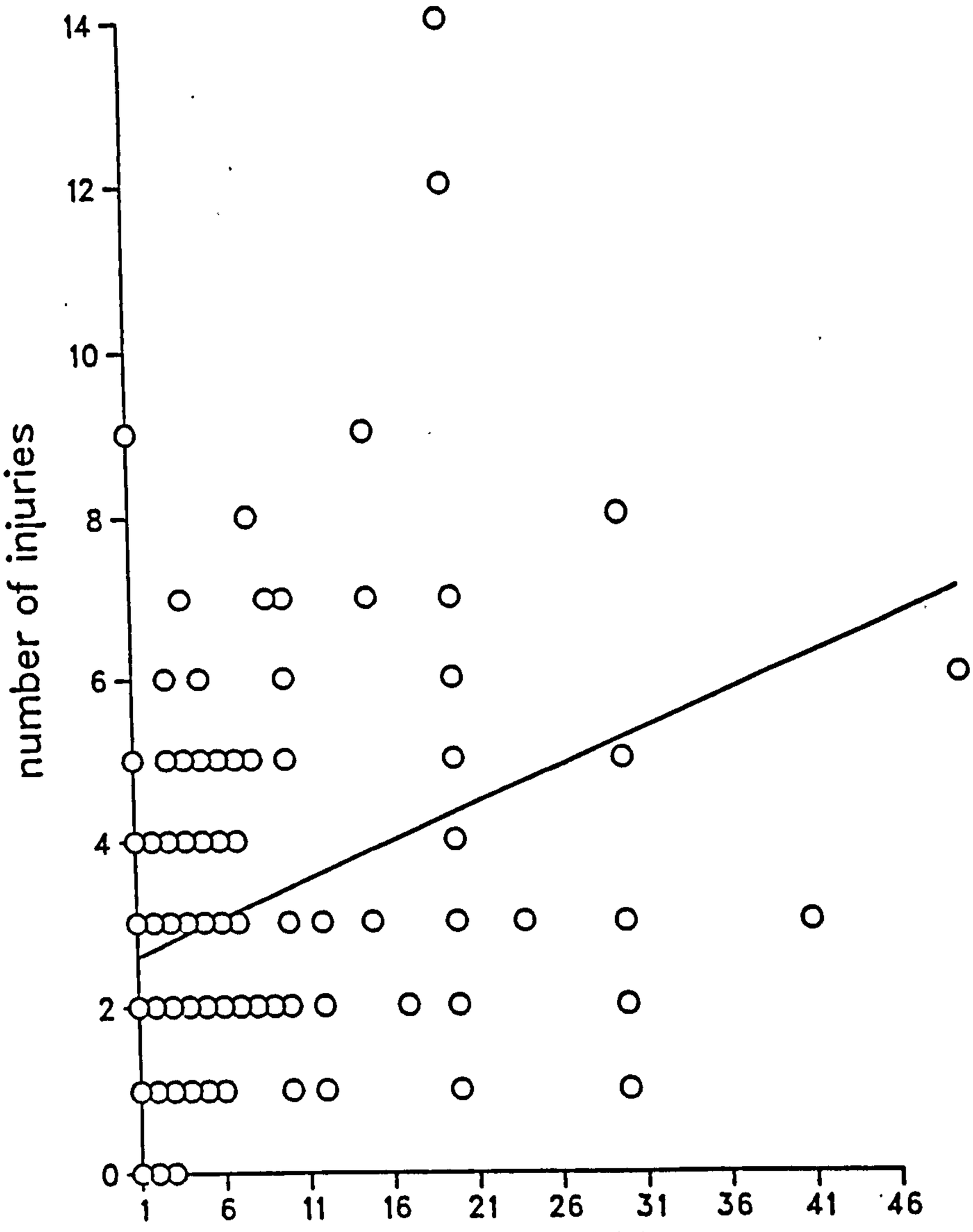

FIGURE 9.1(f): Number of injuries by reported number of blows

TABLE 9.1(g): Type of Injury By Weapon

Type of Injury	Weapon (No. of Victims n = 491)*					Total	
	Blunt*** O/E	Sharp** O/E	Feet** O/E	Fists** O/E	Fists & Feet** O/E	No.	%
Haematoma	25/31	5/20	15/10	67/67	105/89	217	38
Laceration	46/33	41/21	8/11	63/73	77/97	235	41
Fracture	9/16	5/10	4/5	46/36	51/47	115	20
Total	80	51	27	176	233	567	100

* Includes victims reporting the use of more than 1 weapon
** Includes glasses
*** Excludes assaults with combinations of weapons where sharp weapons were used

χ^2 (Yates corrected) = 51.35
p = <0.001

TABLE 9.2(a): Site of Injury by Type

Site of Injury	No. of Victims* (n = 530)						Total	
	Haematoma Obs/Exp	(%)	Laceration Obs/Exp	(%)	Fracture Obs/Exp	(%)	No.	%
Face	344/404	(53)	380/355	(66)	141/106	(83)	865	62
Other head & neck	48/53	(7)	59/46	(10)	6/14	(4)	113	8
Thorax	94/51	(14)	13/45	(2)	3/14	(2)	110	8
Abdomen	26/14	(4)	3/12	(1)	0/4	(0)	29	2
Lower limb	58/35	(9)	12/30	(2)	4/9	(2)	74	5
Upper Limb	79/92	(12)	103/81	(18)	16/24	(9)	198	14
Total	649	(100)	570	(100)	170	(100)	1389	100

* Includes victims with multiple injuries

χ^2 (Yates corrected) = 159.06
p = <0.0001

TABLE 9.2(b): Distribution of Haematomas by Gender of Victim

Site of Injury	No. of Victims* (n = 530) M Obs/Exp	F Obs/Exp	Total No.	%
Face	287/266	57/78	344	53
Other head and neck	35/37	13/11	48	7
Thorax	73/73	21/21	94	14
Abdomen	19/20	7/6	26	4
Lower limb	36/44	22/13	58	9
Upper limb	52/61	27/18	79	12
Total	502	147	649	100

* Includes victims with multiple injuries

χ^2 (Yates corrected) = 19.55
p = <0.01

TABLE 9.2(c): Distribution of Lacerations by Gender of Victim ‡

Site of Injury	No. of Victims* (n = 530)		Total	
	M Obs/Exp	F Obs/Exp	No.	%
Face	356/349	24/31	380	67
Other head and neck	52/54	7/5	59	10
Thorax	12/12	1/1	13	2
Abdomen	3/3	0/0	3	1
Lower limb	6/11	6/1	12	2
Upper limb	95/95	8/8	103	18
Total	524	46	570	100

* Includes victims with multiple injuries

χ^2 (Yates corrected) = 25.62
p = <0.01

TABLE 9.2(d): Distribution of Fractures by Gender of Victim ‡

Site of Injury	No. of Victims* (n = 530) M Obs/Exp	F Obs/Exp	Total No.	Total %
Face	121/120	29/29	150	87
Other head and neck	2/2	1/2	3	2
Thorax	2/3	1/0	3	2
Abdomen	0/0	0/0	0	0
Lower limb	3/3	1/1	4	2
Upper limb	12/13	4/3	16	9
Total	138	35	173	100

* Includes victims with multiple injuries

χ^2 (Yates corrected) = 0.22
p = NS

TABLE 9.2(e): Types of Fracture by Region

Region		Fracture	Number of Victims	(%)
Face	Upper third	Supra-orbital ridge	2	(1)
	Middle third	Nasal complex	47	(27)
		Zygomatic complex	38	(22)
		Le Fort I/II	2	(1)
	Lower third	Condyle/coronoid	15	(9)
		Body*	21	(12)
		Angle	21	(12)
		Symphysis	2	(1)
Other head and neck		Skull	2	(1)
Thorax		Rib	3	(2)
Abdomen		-	0	(0)
Lower limb		Phalanges	2	(1)
		Tibia	1	(0)
		Lateral malleolus	1	(0)
Upper limb		Metacarpals	3	(2)
		Phalanges	9	(5)
		Radius/ulna	5	(3)
		Humerus	2	(1)
Total			176	(100)

* Includes 3 dento-alveolar fractures

TABLE 9.2(f): Distribution of Facial Injuries by Type of Injury and Gender of Victim

Site of Injury	No. of Victims													Total		
	Males							Females								
	Haematomas	(%)	Lacerations	(%)	Fractures	(%)	Rank*	Haematomas	(%)	Lacerations	(%)	Fractures	(%)	Rank*	No.	(%)	Rank*
Upper L	29	(10)	59	(17)	1	(1)	5	6	(11)	2	(8)	0	(0)	6	97	(11)	5
Upper C	9	(3)	22	(6)	0	(0)	9	3	(5)	1	(4)	0	(0)	9	35	(4)	9
Upper R	23	(8)	42	(12)	1	(1)	6	2	(4)	5	(20)	0	(0)	7	73	(8)	6
Total	61	(21)	123	(35)	2	(2)		11	(19)	8	(33)	0	(0)		205	(23)	
Centre L	75	(26)	57	(16)	8	(7)	1	19	(33)	3	(13)	0	(0)	1	162	(19)	1
Centre	43	(15)	43	(12)	38	(31)	2	7	(12)	2	(8)	10	(34)	3	143	(16)	2
Centre R	59	(21)	38	(11)	4	(3)	3	13	(22)	5	(20)	2	(7)	2	121	(14)	3
Total	177	(62)	138	(39)	50	(41)		39	(68)	10	(42)	12	(41)		426	(49)	
Lower L	14	(5)	29	(8)	22	(18)	7	2	(4)	1	(4)	6	(21)	5	74	(8)	6
Lower C	21	(7)	53	(15)	23	(19)	4	4	(7)	5	(20)	5	(17)	4	111	(13)	4
Lower R	13	(5)	13	(4)	24	(20)	8	1	(2)	0	(0)	6	(21)	7	57	(7)	8
Total	48	(17)	95	(27)	69	(57)		7	(12)	6	(25)	17	(59)		242	(28)	
TOTAL	286	(100)	356	(100)	121	(100)		57	(100)	24	(100)	29	(100)		873	(100)	

* 1 = most injuries, 9 = least injuries L = Left, C = Centre, R = Right

TABLE 9.3(a): Severity of Injury by Gender of Victim

Severity of Injury (Category)	No. of Victims* (n = 539)		Total	
	M Obs/Exp	F Obs/Exp	No.	%
I	260/260	48/48	308	57
II	65/60	6/11	71	13
III	20/18	1/3	21	4
IV	84/90	23/17	107	20
V	26/27	6/5	32	6
Total	455	84	539	100

χ^2 (Yates corrected) = 5.85
p = NS

TABLE 9.3(b): Severity of Injury by Weapon

Severity of Injury (category)	Weapon (No. of Victims n = 491)					Total	
	Blunt O/E	Sharp* O/E	Feet O/E	Fists O/E	Fists & Feet O/E	No.	%
I	38/33	26/25	13/11	84/82	74/84	235	58
II	8/6	10/5	2/2	10/16	16/16	46	11
III	2/1	3/1	0/0	1/3	4/4	10	2
IV	4/12	4/10	3/4	36/31	42/32	89	21
V	5/4	1/3	1/1	10/9	9/9	26	6
Total	57	44	19	141	145	406	100

* Includes glasses

χ^2 (Yates corrected) = 31.32
p = <0.05

TABLE 9.3(c): Severity of Injury by Number of Blows

Severity of Injury	Alleged Number of Blows (No. of Victims n = 357)										Total	
	1	(%)	2–3	(%)	4–6	(%)	7–10	(%)	>10	(%)	No.	(%)
I	87	(64)	50	(54)	35	(54)	17	(59)	19	(51)	208	(59)
II	12	(9)	21	(23)	9	(14)	3	(10)	7	(19)	52	(15)
IV	26	(19)	17	(18)	16	(25)	5	(17)	8	(22)	72	(21)
V	8	(6)	5	(5)	5	(8)	4	(14)	3	(8)	25	(7)
Total	133	(100)	93	(100)	65	(100)	27	(100)	37	(100)	357	(100)

χ^2 (Yates corrected) = 27.48
$p = <0.05$

TABLE 9.3(d): Severity of Injury by Occurrence of a Fall During Assault

Severity of Injury	Fall (No. of Victims n = 503)				Total	
	Yes Obs/Exp	(%)	No Obs/Exp	(%)	No.	(%)
I	156/162	(54)	125/119	(59)	281	(56)
II	46/40	(16)	23/29	(11)	69	(14)
III	11/12	(4)	9/8	(4)	20	(4)
IV	65/58	(22)	36/43	(17)	101	(20)
V	12/18	(4)	20/14	(9)	32	(6)
Total	290	(100)	213	(100)	503	(100)

χ^2 (Yates corrected) = 10.06
p = <0.05

TABLE 9.3(e): Severity of Injury by Alcohol Intake

Severity of Injury	Alcohol Intake in Units* (No. of Victims n = 487)			Total	
	0	1-10	>10	No.	(%)
I	95/82	116/117	58/70	269	(55)
II	11/21	32/29	25/18	68	(14)
III	4/6	8/8	6/5	18	(4)
IV	34/31	38/44	29/26	101	(21)
V	5/9	17/13	9/8	31	(6)
Total	149	211	127	487	(100)

* 1 unit = ½ pint beer/lager, 1 glass of wine, 1 measure of spirits

χ^2 (Yates corrected) = 17.17
p = <0.05

TABLE 9.4(a): Admission to Hospital by Gender of Victim

Gender of Victim	No. of Victims Admitted (n = 539)		Total	
	Yes Obs/Exp	No Obs/Exp	No.	(%)
Male	71/73	384/382	455	(84)
Female	15/13	69/71	84	(16)
Total	86	453	539	

χ^2 (Yates corrected) = 0.13
p = NS

TABLE 9.4(b): Admission to Hospital by Weapon*

(* not including victims assaulted with a combination of weapons - excepting fists and feet)

Weapon	No. of Victims Admitted (n = 406)		Total	
	Yes Obs/Exp	No Obs/Exp	No.	% Admitted
Blunt	7/9	50/48	57	20
Fist	20/22	121/119	141	14
Feet	5/3	14/16	19	26
Sharp/glass	8/7	36/37	44	18
Fist + feet	29/23	116/122	145	20
Total	69	337	406	100

χ^2 (Yates corrected) = 15.47
p = NS

TABLE 9.4(c): Admission to Hospital by Reported Number of Blows

No. of Blows	Admitted to Hospital (n = 364)		Total	
	Yes Obs/Exp	No Obs/Exp	No.	%
1	23/19	111/115	134	37
2-3	12/13	82/81	94	26
4-6	6/9	60/57	66	18
7-10	7/4	24/27	31	9
>10	4/6	35/33	39	11
Total	52	312	364	100

χ^2 (Yates corrected) = 3.19
p = NS

TABLE 9.4(d): Hospital Admission by Occurrence of a Fall During Assault

History of Falling	Admitted to Hospital (n = 422)		Total	
	Yes Obs/Exp	No Obs/Exp	No.	%
Yes	51/47	239/243	290	58
No	30/34	183/179	213	42
Total	81	422	503	100

χ^2 (Yates corrected) = 0.87
p = NS

TABLE 9.4(e): Hospital Admission by Recent Alcohol Intake

Recent Alcohol Intake (units)	Admitted to Hospital (n = 487)		Total	
	Yes Obs/Exp	No Obs/Exp	No.	%
0	18/25	131/124	149	31
1-10	41/35	170/176	211	43
>10	22/20	105/107	127	26
Total	81	406	487	100

χ^2 (Yates corrected) = 4.68
p = NS

CHAPTER 10

PSYCHIATRIC EFFECTS OF VIOLENT INJURY

The number, age and gender of victims of assault, falls and road accidents are given in Table 10.1, and types of fracture in Table 10.2. 62 (83%) of victims were males and 13 (17%) females. Mean age for the three groups was 28.0 years (range of means 27.5–28.8 years), though age range within each group varied between 18 and 77 years. 56% of victims had mandibular fractures, though in 11% of cases these affected only the mandibular condyle or neck. 29% of victims had zygomatic fractures, 8% Le Fort pattern fractures, and 6% nasal fractures. There were no significant differences between groups of victims with regard to type of fracture, although there was a tendency for road accident victims to have fewer mandibular fractures, and for victims of falls to have fewer nasal or Le Fort pattern fractures and more isolated condylar fractures.

General Health Questionnaire (GHQ) and Hospital Anxiety and Depression Scale (HAD) scores for the three groups of victims who completed the questionnaires at one week (± 2 days) and 3 months (± 1 week) are presented in Table 10.3. At 3 months, victims of assault demonstrated higher levels of psychiatric disturbance, anxiety and depression than at one week, and these victims were significantly more disturbed and anxious than victims of falls. There was a strong (non-significant) tendency towards more depression in the assault group. Compared with victims injured in road accidents, assault victims were less psychiatrically disturbed <u>initially</u>, though at 3 months they were more disturbed; however, neither difference was statistically significant. Anxiety and depression scores were significantly lower in road

accident victims at 3 months compared with assault victims, though at one week there were no significant differences. Victims of both falls and road accidents combined were significantly less psychiatrically disturbed at one week and at 3 months than assault victims. The combined group also demonstrated significantly lower anxiety and depression scores at 3 months. Strikingly, though anxiety and depression scores rose between one week and 3 months in the assault group, the reverse was true of victims of falls and road accidents.

Table 10.4 presents data concerning the incidence of abnormality demonstrated by the three tests. The incidence of initial abnormality detected by the GHQ was highest in the road accident group (83%), but lowest in the fall group (17%). At 3 months, however, assault victims demonstrated the highest incidence of abnormality (45%) compared with road accident victims (38%) and victims of falls (30%). The incidence of abnormality among victims of falls thus increased between one week and 3 months (17%-30%).

37% of assault victims were anxious at one week, but only 20% were depressed. The incidence increased to 40% and 30% respectively by 3 months. By contrast, 33% of victims of falls were anxious at one week, but only 8% were depressed. These proportions decreased to 10% and 0% by 3 months, and the same pattern was seen in the road accident group, although more were depressed initially (17%) and at 3 months (13%), compared with victims of falls.

To test the assertion that the severity of injury or the need for inter-maxillary fixation (IMF) influenced psychometric scores, 37 victims who had mandibular or maxillary fractures requiring IMF were compared with 35 victims not requiring this treatment (mainly those with zygomatic fractures). No statistically significant differences were found between the two groups either at one week or at 3 months.

10.1 Discussion

These data indicate ~~clear~~ differences between assault victims and victims of falls and road traffic accidents. Victims of assault demonstrated significantly higher levels of psychiatric disturbance both at one week and at 3 months post-injury when compared with victims of falls and road accidents combined. They were also more anxious and depressed at 3 months (though not initially, compared with victims of road accidents). Furthermore, abnormal levels of anxiety and depression were identified in more assault victims, particularly at 3 months. Interestingly, the findings of this study are similar to those of Shapland et al [1985], who found evidence that psychological disturbance persisted, and even increased, in victims known to the police over the 2-year period after assault. In the present study, only assault victims remained as anxious and depressed at 3 months, compared with 1 week; victims of falls and road accidents became less anxious and depressed.

Explanations of this greater and more prolonged psychiatric disturbance include the possibility that deliberate injury had a greater effect than accidental injury, possibly reflecting a greater loss of self-confidence. It is also possible that victims of falls and road accidents feel more able to avoid future accidents - for example, by simply avoiding driving or walking on dangerous surfaces - whereas victims of assault cannot avoid contact with strangers, all of whom are seen as potential assailants. The social effects of assault tend to confirm this: many victims withdrew from outside contact, though this was also a result of embarrassment about physical appearance. Previous work also suggests that fear of meeting assailants and sustaining further injury is an important cause of lasting psychiatric effects, in that victims have been reported as repeatedly imagining

that they had seen their assailants in the street [Shapland et al, 1985]. A further explanation may be that individuals' self-confidence was particularly eroded by an incident which demonstrated to them that they were unable to prevent injury even when confronted only by another person (i.e. where external factors such as a motor car or an icy pavement were not contributory causes of injury). In this sense, the term 'inter-personal violence' seems a particularly apt description of assault. This effect might be even more marked if the victim felt responsible for the assault in some way, or had initiated it. There is evidence that victims are often blamed by others for being out-of-doors late at night, alone, and in a dangerous area, for example [Hamilton, 1987]. This may result in reduced support from family and friends. It may be the case that this applies more to assault victims than to victims of falls or road accidents, and is responsible for prolonged loss of self-confidence which manifests itself in anxiety and depression. Certainly, external factors such as the weather, mechanical faults, and road conditions, may be blamed in accidental injury.

In this study, variable severity of injury seems an unlikely cause of increased psychiatric morbidity in assault victims, because care was taken to include only those victims with similar types of facial injuries. Moreover, when patients whose jaws had been wired together were compared with those where this was not done, no differences were detected in scores, suggesting that neither the severity of injury nor the need for surgery influenced anxiety and depression levels, at least at 1 week and at 3 months. It is possible, however, that anxiety and depression levels were higher preceding injury, and even that these contributed to the cause of assault in some way.

Compared with previously established General Health Questionnaire scores obtained from randomly selected populations of adult pedestrians in Manchester [Goldberg, 1974], victims surveyed in this study demonstrated substantially more psychiatric disturbance, both at 1 week and at 3 months, though scores obtained from victims of falls at 1 week and at 3 months, and from victims of road accident victims at 3 months, were similar to those obtained from randomly selected patients in the waiting rooms of general practitioners [Goldberg, 1974].

Friedman et al [19782] have described a 'crisis stage' immediately following any kind of victimisation, but this term seems to be misleading when applied to victims of assault, because anxiety and depression were more marked at 3 months compared with at 1 week, though the reverse was true in victims of falls and road accidents. Hough and Mayhew [1983] found that assault victims who were seriously affected at 3 months continued to be so at 1 year, so that it is possible that scores in this study would have remained constant for some time after completion of the second questionnaire.

Though this investigation should be repeated to confirm or refute its findings, these psychometric data indicate that assault has a greater psychologic and psychiatric impact than is found in falls and road accidents. This should be recognised in terms of compensation, and in terms of routine screening of victims, and in the involvement of general practitioners and psychiatrists in severe cases. In this study, almost half the victims demonstrated psychiatric disturbance in the longer term, and relatively minor physical injury is no reason to ignore this important and persistent problem.

TABLE 10.1: Number, Age and Gender of Victims

Victims (n = 75)	Aetiology of Fracture			
	Assault	Fall	Road Accident	Total
Number (M + F)	42 (30+12)	18 (17+1)	15 (15+0)	75
(%)	(56)	(24)	(20)	(100)
Age (mean (range))	27.5 (18-55)	28.8 (15-77)	27.8 (17-58)	28.0 (15-77)

TABLE 10.2: Aetiology of Fracture by Site(s)

Site of Fracture	Aetiology							
	Assault	(%)	Fall	(%)	Road Accident	(%)	Total	(%)
Mandible*	20	(48)	9	(50)	5	(33)	34	(45)
Condyle (isolated)	4	(10)	3	(17)	1	(7)	8	(11)
Zygoma	12	(29)	6	(33)	4	(27)	22	(29)
Le Fort pattern**	4	(10)	0	(0)	2	(13)	6	(8)
Nose	2	(5)	0	(0)	3	(20)	5	(6)
Total	42	(100)	18	(100)	15	(100)	75	(100)

* Excluding isolated condyle fracture
** 5 of these victims also had other facial bone fractures

TABLE 10.3: Psychometric Scores by Type of Injury and Interval After Wounding

Aetiology and Interval After Fracture	Psychometric Scores (mean (SD))					
	GHQ**		HAD***			
		p*	Anxiety	p*	Depression	p*
Assault						
1 week	8.2 (7.7)		6.4 (4.3)		4.0 (3.5)	
3 months	7.35 (9)		7.5 (5.3)		4.8 (4.9)	
Fall						
1 week	1.6 (2.4)	0.005	3.8 (3.7)	0.05	3.0 (3.8)	0.088
3 months	2.0 (2.9)	0.036	2.9 (4.6)	0.0048	2.1 (2.3)	0.074
Road Accident						
1 week	8.6 (5.2)	0.29	5.9 (3.1)	0.47	4.4 (4.5)	0.47
3 months	4.0 (5.1)	0.24	4.1 (3.4)	0.03	2.3 (3.7)	0.026
Fall + Road Accident						
1 week	4.4 (5.0)	0.009	4.8 (3.9)	0.12	3.5 (3.9)	0.18
3 months	3.3 (4.1)	0.04	3.4 (4.0)	0.0044	2.2 (2.9)	0.03

* Probability of difference compared with assault group (Mann-Whitney Non-Parametric Statistical Test)

** Abnormal GHQ score >4

*** Abnormal Anxiety/Depression score >8

TABLE 10.4: Incidence of Psychiatric Disorder, Anxiety and Depression

Aetiology of Fracture and Interval	Incidence of Abnormality (%)		
	Psychiatric Disturbance	Anxiety	Depression
Assault			
1 week	54	37	20
3 months	45	40	30
Fall			
1 week	17	33	8
3 months	30	10	0
Road Accident			
1 week	83	33	17
3 months	38	13	13

CHAPTER 11

THE SOCIAL EFFECTS OF ASSAULT

11.1 The Assault

Bewilderment and helplessness in the face of sudden physical attack characterised the descriptions of many assaults:

> "Somebody walked out from behind the pillar ... and I just fell on the floor like ... he hit me like and I don't know what it was with ..."
>
> "I didn't even see it coming ..."
>
> "He stopped the car and ran back and beat the hell out of me ... I was hit to the ground ... I was totally out of it."
>
> "All I can remember is being hit very hard in the face ... the next thing was that I was down on the floor and he wasn't there."
>
> "I just remember getting a glass - it was a sleever [a tall beer glass] ... as I came round the bend it was like, as you throw a punch, he just forced it into my face."
>
> "He had me on the floor and was kicking me in the face ... they were all dancing round going 'Y ... e ... a ... h'."
>
> "I didn't really know what was going on because it was so fast."
>
> "No ... I didn't even see him punch me."
>
> "He grabbed both my cheeks and pushed me up against the wall or something ... then he hit me in the face and I fell down and he hit me while I was on the floor as well and I went out for a couple of seconds and when I woke up he was gone."

10% of victims reported that alcohol had made them more provocative or less able to respond to the assault, and others could not remember any part of the assault because of unconsciousness:

> "I verbally accosted somebody outside for some reason ... I mean I'd had a few to drink anyway - I wasn't exactly sober, but I don't think I was completely ..."
>
> "It was Christmas Eve and we'd all been drinking and that and I can't really remember much about it."

"Of course I was legless with drink, on my stag night, you know ... he could have pushed me over [the bouncer] and that would have been the end of it."

"We were all down the club ... and that's all I can remember then until I come round and someone was carrying me up the hospital."

"I didn't feel nothing. All I felt that day was coming in an ambulance ... I don't know who exactly done it, see."

"I was undoing the door-lock - got up and looked at them. And that was it. That's where it stops. The next thing I know I'm in the BRI."

"The next thing I knew I woke up in hospital, and that's all I remember about that, apart from what my friends have told me."

Many victims seemed embarrassed or upset that they were unable to resist attack or recall the sequence of events preceding or during the assault, and this was particularly pronounced when there was no apparent reason for violence.

"Well I was walking along the road and suddenly we were set upon ... they came running from behind us ... we saw them running like and didn't know what they were running at, and they just came and set upon us ... no hassle or nothing. We didn't even know who they were ... no reason for it ... nothing to do with football, I was dressed in no colours or nothing I had a black jumper on, a pair of jeans and there was no verbal ... nothing was passed between us, they had no idea we were City supporters - I don't even know who they were, I don't even know whether they were the other lot or anything. It was so quick I don't think I could recognise them again."

"I didn't know what the heck was going on. You know, I didn't know - there was all these people around, I didn't know what was happening and, um, I wanted to know what had happened and I wanted somebody to tell me precisely what had happened, um, you know - mass confusion it seemed to be."

It was striking that many victims experienced no pain or discomfort until some time after the assault, and many were not aware of any injuries until bleeding was noticed:

"It only started to pain just as I was getting to the hospital, like."

"It didn't hurt at the time. I didn't even realise I was cut until someone said there's blood all over me ... It was after say five minutes it started hurting."

"I could feel my face bleeding because I could feel the blood (but no pain or discomfort) running down my face and down my body and I could feel myself sort of draining away like."

"It wasn't the pain, there wasn't that much pain really ... it was surprising ... the worst thing was when I went outside there was a big panel glass door and I could see me reflection and cor, you know. I was a bit upset then, you know, I had to sit down. There was blood everywhere ... very bad ..."

"I just looked at my hand and I sees a lot of blood and I went and washed my hand and I just seen a hole in it. That's all it was."

Most victims whose injuries gave rise to bleeding were assaulted in or near pubs and clubs where help from others was available. In one case, however, the victim was hit by a stone in a public park and then left alone. He found the situation alarming, and appeared too surprised or confused to take any action at all:

> "I caught the missile in the eye like. At the time I didn't know what to do like ... what I really wanted was to get someone to stop the blood running down my face. Then somebody saw what a predicament I was in like and gave me some tissues."

In the context of bleeding, some victims seemed more concerned about their clothes becoming spoiled than about their own injuries:

> "There was blood all over me leather jacket, what I had on see."
>
> "I wanted somebody to stop the blood from running down my ... ruin my clothes."
>
> "I had to take me shirt off."
>
> "It was leather and suede. It was all down my jacket."

One victim did not associate bleeding with the need for medical treatment and had to be told that attention was required:

> "I thought I had a nosebleed and that was about it. It wasn't until later someone said 'Your nose is broken'."

Whilst nearly all men were assaulted in crowded areas where help from others was available, most women were assaulted at home by husband or cohabitee, away from such help. Victims in this situation therefore had to initiate the aid process themselves:

"He punched me about 10 times and then walked out with his friend. I went to the police station in Trinity Road."

"I was on the floor ... in the passage. I got up off the floor. I went out. I walked away down the street. Down the road, and then I seen my sister."

"He went out, came back, and he, well, nearly killed me. We had a really big Victorian house and he absolutely wrecked it. I mean all the doors off the hinges, every piece of crockery, Le Creuset cast-iron dishes, and hitting me with a spade. I grabbed the children and ran out of the house eventually and a neighbour who had heard the rumpus just picked me and the kids up and took me to his house."

"We had an argument. He went out and came back drunk and then we just had another argument and beat me up ... with a metal lamp ... . The next thing I knew I was hopping with pain and I just left."

Though most men were taken to hospital by bystanders, women were usually taken by close relatives or the police. In one case, however, hospital treatment was not sought initially because of commitments to children:

"I went to the doctor and he said I had broken ribs and had to go to hospital ... I said 'Well I've got the kids', so I didn't go to hospital, I just stayed at home."

One schoolboy who sustained a fractured mandible was taken to hospital by the school nurse, though the first reaction of a teacher was to blame both him and his assailant:

"Then the teacher came along and said: 'You'd better go and stand outside the headmaster's office' ... so he made us stand there and then the nurse came along."

11.2 Emotional Response to Assault

Immediate responses to assault included feelings of being stunned, dazed, numbed or shocked. For example:

"Well, I was dazed for about five minutes like ..."
"I was in a bit of state of shock ... well, I think I was subdued ... you know, very subdued."

"I usually just freeze [battered wife]. I will just sit in a chair or wherever, or stand there and sort of huddle myself together."

"You don't even think about it - nothing goes through your mind."

"I felt the punches you know ... I thought 'He's obviously done some damage' 'cos I had no feeling at all ... I couldn't feel anything."

"Very groggy ... bit shaky ... and had to sit down in a matter of a few feet."

"I had no time to feel afraid about anything."

"It was a tremendous shock at the time."

Many victims were also very frightened:

"I felt terrified because I thought he'd come back again, like, sort of thing. I mean, I might have had more injuries like."

"Scary ..."

"That was the only time I was terrified in my life, you know. You don't think they will do something like that, you know." [The police were the alleged assailants]

"Well of course I was scared. I didn't know what to do."

"It was quite terrifying. I was very scared, and I ran, I physically ran away and then he caught me."

"It scared me because something was broken, I suppose."

"Oh, horrible ... just frightened, I suppose."

"Very frightened. I thought I was dead and my life flashed before me."

Some patients, however, stated that they were not in the least frightened, and that other emotions predominated, or that they were not upset in any way:

"I was more bothered than scared because for a week after I was thinking all the time why he wanted to do it."

"No I didn't [feel scared]. I just thought it was a whack in the face, bit of bruising ..."

"All I can remember feeling when he was hitting me was that this was silly. He just kept hitting. I felt more sorry for him."

"It's just another night, isn't it."

"I didn't really [feel scared]. I had no effects at all."

"No, I wasn't scared, being in pain as well, like."

"To me it was nothing."

Anger was felt by 62% of victims, though not always directed against the assailant. One bouncer was angry with himself for allowing someone to injure him:

> "It was my fault I got cut ... I don't like having marks on my body ... I just wanted to get out [of hospital] ... if I'd had my own way I wouldn't have gone up there."

Another victim, who had been assaulted after leaving prison, where he had been serving a sentence for indecent assault, was angry with the boy whom he had indecently assaulted:

> "I feel angry with the boy. The boy who accosted me in the first place and put me in gaol. 'Cause it was his blooming fault."

In most cases, however, victims were angry with their assailant:

> "I felt angry at the time ... very angry actually."
>
> "Because he [a bouncer] could see I was paralytic and he hit me for no reason at all, I wasn't aggressive with him, you know, nothing like that."
>
> "He was a prat to do it, wasn't he?"
>
> "As soon as it happens the adrenalin goes, I think, and you get a bit worked up - not sort of worked up where you want to go out and start hitting people, but 'What was that for?'."
>
> "Yeah, I was angry 'cos at the time I thought, when it actually happened I thought 'What's he done?'."
>
> "Not scared, just a bit angry."
>
> "I did, yeah, very angry. If I could have found out where they were I would have done something about it."
>
> "I was angry, yes, because I didn't know who it was."
>
> "I was shouting at everybody, I can't stand my own grandchildren, I was screaming at my youngest kid - I can't stand the noise they made, you know. It was really, really bad."
>
> "I just couldn't figure out why he done it, I was more angry about why."

Thus anger also appeared to reflect frustration at not knowing the

assailant's identity and particularly not knowing why the assault occurred. Many victims seemed to think that the assault was unjustified or unfair. Some did not mention anger as such, but they did describe their feelings in similar terms:

> "I was more bothered ... because for a week after I was thinking all the time why he wanted to do it."
>
> "I couldn't figure out what had happened."
>
> "Really bad ... disgusted, you know. If I'd done something I could understand him getting the way he did."
>
> "I felt revenge, I felt like I'd like to do to them what they'd done to me ..."
>
> "I wanted to get my revenge on him, you know, but it doesn't keep me awake at night."
>
> "I felt nastiness to him."
>
> "I just thought it was so stupid."

Those victims who had been unconscious during the assault reacted in two ways. Some were extremely curious about what had happened:

> "I still don't know why he did it, what was going on at that time - I just walked into it and I still don't know why ... I had to find out why."
>
> "I'd still like to know what was happening ... I think sort of who was there and who was wandering around. I often wonder. Lots of people have told me, like."

Others were pleased that they had been unconscious and unaware of the events of the assault:

> "I think what helps in a way is I can't remember it."
>
> "It may be partly that ... being unconscious is partly a protective thing in that ... you can't remember it ... you know ... it isn't there."

One victim wished that he had been knocked out at the start:

> " ... perhaps it would have been better ..."

Feelings of unreality seemed particularly marked in victims who had been unconscious and who had woken up in unfamiliar [hospital] surroundings:

"When I woke up in the hospital I thought: 'What am I doing here?' It was a weird feeling, very weird."

"I didn't know where I was. I went completely out and the next thing was some chap was stitching up my leg."

Depression was experienced soon after the assault by some victims, but more (40%) reported depression after the first few days:

"Well I felt depressed in the hospital like ... with all my friends enjoying themselves outside ..."

"Depressed I think, but nothing prolonged really."

"If you've lost [a fight] you're on a bit of a downer."

"Yes, I think I was quite depressed, yes, the first couple of weeks."

"I was probably feeling sorry for myself, you know."

"Angry and depressed. I was depressed for two months."

"I just felt a bit dumpy."

"I was on a downer a bit because I was off work, and it was no fault of mine. At the moment I would say I was depressed - it did set me back a long way without a doubt."

"I felt very fed up and very depressed."

Inability to make sense of things was also frequently reported, often resulting in self-imposed seclusion, away from friends and outside contact:

"In the two weeks that I stayed at home ... I stayed in like ... 'cos I felt sort of weak. I stayed in 'cos that's the way to get better sort of thing, isn't it?"

"Just really nervous of everything ... I just felt on edge and jumpy all the time. I just couldn't handle anything. Couldn't speak to anyone really. For a couple of weeks just feeling paranoid about things."

"I just wanted to walk away."

"I think I was subdued, you know, very quiet for a couple of weeks. Well I never went out actually, for three to four weeks ... There's nothing there at all now though."

"It was three weeks before I went back to college, so I was all totally up together again before I went back."

"I was probably feeling sorry for myself, you know."

"I just felt like you don't really care what was going on around you sort of attitude."

"I feel very mixed up in my thoughts like, it takes me some time to make a decision ... I just wanted to be on my own. I went sort of driving at night."

Accompanying this reaction were nervous, shaky feelings. These tended to occur immediately after injury, but occasionally developed later, when the extent of physical injury became apparent:

"When it did really hit me was sort of two or three days later, you know, the swelling came out and I could actually see what had happened, you know. I was in a bit of a state of shock."

"I had no effects at all until the next day and then I felt sort of tired and still a bit hazy and giddy ... it lasted a good week, I'd say."

"Funnily enough, we had darts on the Monday night [two days after the assault] and I didn't play at all then, and my hands was all shaky. I couldn't get on at all with that. They reckoned it was a bit of delayed concussion - I don't know."

"You just feel your knees go a bit funny ... an hour after."

"Oh yeah ... it might have been delayed shock or something like that."

This was also a feature in victims who had been unconscious during the assault:

"A bit shaky ... shocked really ... it was just sort of looking forward to getting out of hospital."

The interaction between physical injuries and emotional reactions was even more striking in other victims:

"Yes, I felt a bit sick at the time because my face was swelling up, and going back in the car as well I felt as thought I was going to be sick as well."

20% of victims reported little or no emotional upset:

"It's just another night isn't it?"

"I mean, I'm quite an easy-going person and things like that just ... well ... it's happened."

"It's just one of those things, isn't it?"

"It weren't awful, just inconvenient isn't it?"

Others seemed to understate the full emotional impact of their assault in attempts to convince themselves that nothing untoward had happened:

> "No things like that don't affect me. I'm alright. I just wanted to get out - my attitude was just to get out [of hospital]."

> "I wanted to get my revenge on him, you know, but it doesn't keep me awake at night. I just can't be bothered with it, that's all."

Another victim was able to distance himself from the assault by thinking about his experience as one (expected) sign of being in a violent society:

> "What annoys me about physical violence is that you're damaging ... you break somebody's nose or something and it's a different shape for the rest of their life."

In this context, he was able to talk dispassionately even about having to spend Christmas in hospital with his jaws wired together:

> "Yeah, it was a good experience ... it's just an interesting thing to do, a novel sort of experience ... I'm always quite interested when I go up to hospital."

Surprisingly, he looked back on the assault very positively:

> *Q: "Has it left you with any scars at all, would you say?"*
>
> A: "No, I think it's left me more enriched, I'd say."

Overall duration of emotional upset is given in Table 11.2. 13% reported no upset, whilst a further 24% reported upset only during the week following assault. More than half of those interviewed had recovered by one month, three-quarters had recovered by six months, and one quarter were still affected by the time of interview. Victims who reported continued emotional upset at the time of interview described feelings of distrust and nervousness:

> "It will take me a long time to be able to ever trust anyone again. Because I think if someone is close to you, you trust them and then they just take away that trust and then you are back to square one again and so ... stop."

> "Just really nervous of everything."

TABLE 11.2: Duration of Emotional Upset

Duration of Upset	Number of Victims	(%)
No apparent upset	4	(13)
0-7 days	7	(24)
8-30 days	6	(21)
1-6 months	5	(17)
>6 months	7	(24)
unknown	1	(1)
Total	30	(100)

Other victims who remained upset at six months described repeated vivid recollections of the assault. One male victim said that even when he was not reliving his assault, he was constantly aware of the event:

> "It was just something that was there."

One Bristol City Football Club supporter appeared much more affected emotionally than other victims, and 'flashbacks' seemed particularly vivid:

> "It still preys on my mind ... I can still see it going on. I can just see sort of hands and feet just kicking and punching me. Perhaps it was only a couple of minutes, but it seemed like hours. It was just like a nightmare ... I can remember it all, you know, as if it had happened yesterday."

Again, physical symptoms were a constant reminder of the attack:

> "I think about it most days like ... most days I can and I do think about it - perhaps because my mouth's still numb, I don't know."

Neither talking to people about the attack,

> "Talking upsets me a lot, as you can see",

physical activity,

> "I go driving at night, stupid hours ...",

nor thinking out the cause of the assault, seemed to help him, and at

every turn powerful reminders in the form of physical symptoms, took his mind back to the assault and away from present activity.

Many victims reported that receiving sympathy from others, crying, or particular activity, was helpful in their emotional recovery, though for some, simply getting back to their daily routine was sufficient:

"I talked about it to my dad ... the next morning. It made me feel better to see that if he'd got his hands on them he'd have ... "

"I didn't cry for months and months. The first time I cried ... was probably after my birthday. I think that is probably why I have got better because it was all bottled up inside me for so long. I felt better the day after and the next day."

"I will walk for hours, down on the sea." [battered wife]

"Going out with friends ... doing hobbies ... making clothes."

"I kept thinking of something else and take my mind of it, see ... like what goes on in the world see, thinking of the railways, and tractors and steam engines see." [elderly male burglary victim]

"I was pleased to have my husband with me and my kids look after me."

"Watching videos and things like that ... of my home, my country, Hungary. My sister sent me a video from the family, you know."

"I light up my cigarette - I feel better."

"I throw cups and dishes in the kitchen."

Q: *"Did you find that talking to people helped to make it fade away?"*

A: "Not really ... just getting on with life."

Recovery seemed particularly rapid in victims who had experienced numerous assaults:

"I suppose I'm hardened to it now." [battered wife]

11.3 Behavioural Changes

70% of victims reported that they had altered their behaviour as a result of being assaulted, and all but one said that these changes were permanent. Changes were most often concerned with visiting the locality where the assault took place:

> "Well, I was down there [at a particular public house] about a week later, but I just didn't feel at ease and that. I've never been down there since."

> "I just keeps clear of that pub."

Decisions to make speech less provocative or aggressive had also been made:

> "I decided to be less verbally aggressive as a result."

> "I just stopped mouthing, that's all."

Three victims had decided not to accompany certain friends or acquaintances, for fear that they might lead them into trouble,

> "You pick the crowd you go out with more selectively."

> "I won't go with those blabbermouths."

> "I hang round with different boys now",

and five had been drinking less after the assault:

> "Well, I drink two pints and after that I'll have orange or summat. Then by the time I've chatted and that, it's time to go home, like. Before [the assault] I'd have five, six - well, on a weekend like."

> "Not to get so drunk."

One battered wife said that she had (successfully) prevented her husband from drinking so much at home, though she was conscious that this course of action had been risky:

> "I don't let him drink as much, but I don't consciously deprive him because if I did it [the violence] would probably start all over again, you know."

At a deeper level, a few victims seemed to acknowledge that their assault was a result of their own foolishness, particularly during 'binge' drinking sessions:

"It just made me a bit more wise."

"To keep my wits about me more ... I'm always on my guard with them, you know, all the time now."

One victim had taken up weight-training to prepare himself for future confrontations, but this had not been kept up:

"To keep fit I was going to do more training, but I get tired driving all day."

Another victim had not visited the city centre for four months after his assault, but boredom at home eventually took him back:

"There's nothing else to do ... there's nowhere else to go."

Whilst the effect on girls was most marked in terms of reticence in forming new relationships after an assault (see above), men were also affected:

"I just keeps meself to meself now."

"Me and Charlie just sit down nice and quiet, keeping well out of it."

Other behavioural changes included not going out-of-doors at night unless accompanied, and using taxis to travel through certain areas.

11.4 Fear of Further Assault

Half of the victims said that they were afraid of being assaulted by the same individual or group again, though few seemed apprehensive about violence from other assailants. This fear seemed particularly marked in women, one of whom was even more frightened of the consequences of telling the police:

"He said: 'If you call the police I'll kill you', so I thought 'I don't really want that, so I won't bother'."

"I would drive home from work and as I approached Clevedon I would get more and more anxious and frightened, hoping that he wouldn't be there, hoping that he would be out when I got home, so that I could scurry around and clean it up and tidy it up and get a meal going and things like this ... I just didn't want him to be there. I was frightened. I was frightened of him."

A prostitute who had been beaten up by a client was worried about further assault because:

> "Every man's the same ..."

Another housewife was prepared to stay with her husband despite being frightened and warnings from her mother:

> "Me mum said once they hit you they don't stop. Don't matter what they says, he'll do it again. But I'm going to take a chance because I couldn't, you know, because I felt a lot for him."

A few victims appeared to be worried that the assault might be repeated because they had upset their assailants in some (unknown or unspecified) way:

> "I was a bit scared because ... I don't know the reason, then they might still have a reason and you know, they might want to have another go."

> "If you can't figure out why they did it, then you realise they behave quite differently from yourself. Then you're afraid of ever meeting up, because you don't know what they'll do."

One victim was particularly frightened of being attacked by blacks:

> "I think they're less sane than white people. They don't have a sense of fair play like a white person's got. They use a lot more weapons and that as well, like knives and crowbars and all that. I think they're more prejudiced to get you back."

11.5 Effects of Relationships

11.5.1 Parents

Two-thirds of victims described some reaction on the part of one or both parents to their assault, though one battered housewife said that her parents, who lived far away, had lost interest in her welfare, and one male victim said that he had concealed the cause of his injuries from his parents. The reactions of most parents were characterised by anger and shock, particularly in response to seeing obvious

facial injuries. This reaction was occasionally tempered with suspicion that the son or daughter had brought the violence on themselves in some way:

> "My mum said: 'My God! What the hell have you been doing?'."
>
> "My dad ... he got really mad."
>
> "From my mother's point of view: 'He was such a pretty boy, and now you've gone and done this'. I guess all mums are like that anyway."
>
> "He was a bit shocked, I think, seeing me as I was when I come home ... all bruises and that."

One interview included both the victim's father and step-mother, who commented:

> "Well it's very upsetting when your son comes home with blood all over his clothes and stitches in his nose. It is upsetting because then you worry every time they go out, don't you?"

Many parents were sympathetic, and demonstrated this in practical support:

> "Yes, in the early stages they came round quite often."
>
> "They just got everything for me, all I wanted."
>
> "I stayed with them for a week, which was ... it's very unusual to stay with them for a week."

Strikingly, more than half (17) of the victims said that their parents were separated or divorced, usually during childhood. In addition, one young male victim's father had recently died, and the mother of another male victim was not able to sympathise or give practical help because of her need for a surgical operation soon after the assault. The reactions of separated parents living at some distance seemed to be less helpful compared with those of parents living close by, and it was clearly more difficult for them to give practical help:

> "My dad lives in Nottingham ... he doesn't have much influence on me."
>
> "I mean, dad, I don't think knows at all."
>
> "I don't know about my dad so much ... he didn't seem all that ... he didn't come to see me in hospital."

When parents were together, both were usually mentioned by the victim. The father was more often described as taking some kind of practical action:

> "Yeah, he [father] flew after him [assailant]. I suppose I'd do the same if someone hit my son",

whilst the mother more often expressed shock. Both often gave advice on the avoidance of future assault, though this was occasionally unrealistic:

> "Oh, stupid, you shouldn't go out, you shouldn't drink so much, you'll get into trouble, she kept going on [mother]."

> "He was quite upset, but as I say, he just kept advising me not to go into town and that, and just turn the other cheek [father]."

Male victims seemed to gain comfort from thinking about their own father's physical prowess, whether real or imagined:

> "He got into worse trouble when he was my age."

> "Yeah ... he boxed for Ireland."

The reaction of step-fathers seemed to differ from that of the natural father, in that less sympathy and spontaneous support were forthcoming. A few victims expressed dislike of their step-fathers:

> "My step-dad, I don't know, I just never have been able to accept him."

Whilst separated or divorced mothers seemed to victims to be unexpectedly concerned,

> "It has probably affected her a lot more than it has me, because she constantly worries about me all the time",

whereas married parents living together were reassuring and helpful simply by carrying on with their daily routine as they always had done:

> "Um, they were sympathetic really. Well, they just carried on as normal, like."

> "Our mum and dad, they normally tend to take like as it happens and handle things, I think, admirably."

11.5.2 Siblings

Siblings seemed to play little part in supporting victims, usually because they lived at a distance and were not aware of the assault until some time afterwards. Sisters were mentioned by seven victims, but brothers by only two. One victim's sister apparently felt responsible because he had taken her to the public house where the assault took place. Other reactions included amusement:

> "They looked at it [a sutured facial laceration] as if it was funny ... they just ... started laughing ... they're not very old",

and the two sisters of another male victim thought he was "stupid". Sympathy was also reported:

> "She's one you can talk to."

Interestingly, the victim who seemed to suffer the most serious and prolonged emotional upset appeared to receive least support from his family (see Section 11.2). His father was ill prior to his assault, and his sick elderly mother needed support herself, and he had no siblings to turn to:

> "None ... nobody, see that made it harder as well, I think."

His relationship with his girlfriend also came to an end shortly after the assault (see below).

11.5.3 Wife/Other Female Partner

Twelve male victims had girlfriends at the time of assault, and two were married. All but two victims reported that this relationship had been strengthened, and that a great deal of sympathy had been shown by most female partners.

> "She came in [to hospital] the day time and often on the night time."

> "She said 'My God, what's happened to you?'. I said 'I've just been beaten up'. She didn't believe it, you know."

"Oh, she was all sympathetic and that."

"They're all sympathetic towards you ... they sort of fuss all over you, don't they, gawking at your big shiner [black eye] and all that."

"She was more worried than what I was really."

"She was more understanding, you know, but she's more angry against the actual person that did it than I am now, like, you know?"

"Oh crikey! When ... she came into hospital and saw me, she was pretty shocked."

"She was good as gold."

"Yes, she came over to Portishead [from Bristol]. She was in hospital nearly every day. She came over to Portishead three or four times a week."

One boyfriend/girlfriend relationship came to an end for reasons not apparently connected with the assault but, in the case of the male victim most emotionally affected, his girlfriend apparently drifted away because:

" ... she found me a different person. She felt that I wouldn't talk to her as much as I used to and wouldn't trust her as much as I used to ... I was quick-tempered, like, you know. I was never like that [before the assault] you know."

One victim said that nervous, shaken feelings had interfered with his sex life, though a sutured facial laceration did not help:

"Well, I still had the stitches in and we just didn't feel like it, you know?"

Another victim said that he accidentally "poked her in the eye once" whilst kissing (his fractured facial bones were immobilised with extra-skeletal fixation), and a married victim said that his sex life had been affected "until the swelling [associated with a fractured nose] went down". A black husband reported that he had become "less cuddly" after the assault, though this appeared to be due to antagonism directed against whites (his wife was white and he had allegedly been assaulted by white policemen), as much as any other

reason. Other than these examples, facial injuries appeared not to affect victims' sex lives.

11.5.4 Husband/Other Male Partner

Of the five women interviewed, three were married and two had boyfriends. All except one had been assaulted by their partners, and both unmarried girls terminated their relationships because of the assault. Of those who were assaulted by their husbands, one reported continued jealousy and subsequent attacks:

> "He is jealous, exceedingly jealous. He even thinks that I meet somebody at lunchtime and go back to their flat and romp around in bed."

This particular assault had few lasting effects, and seemed merely a further violent episode in a tempestuous relationship.

In the case of the second married woman, however, who had not been assaulted before, effects on the husband were far-reaching, and these were apparent in his changed behaviour up to the time of interview:

> "I think he's still sorry ... you know, in the things he does, you can see. Like before he wouldn't even make a cup of tea but now, you know, he'll make drinks ..."

She considered that the relationship was "a lot better" as a result of the assault, and it was apparent that plans had been made to deal with future conflicts:

> "Because he says now when I start shouting the best thing for him to do is to walk away and come back when I've calmed down. Which he do do, if it really comes to the crunch where we really are going mad."

The third married woman said that she had shouted at her husband a great deal soon after being mugged in the street by a stranger, but at the same time "I didn't speak to him for four or five days".

Both the unmarried girls had seen their assailants after being assaulted. One girl, a prostitute, had considered finding out where

her client lived, but in the end had done nothing for fear of further violence and embarrassment. The second girl had received letters from her former boyfriend which she found "a bit embarrassing", but found that the violence affected her when she tried to form a relationship with another man:

> "It's like a barrier in the middle. Right now I don't know what it is, but there is definitely something that would not have been there if he [previous boyfriend] hadn't beaten me up. I don't feel relaxed with him all the time. I think if I ever had an argument with him I wouldn't argue or anything, I'd just leave."

She also thought that her sex life with her new boyfriend had been affected in that she had not slept with him "at first".

11.5.5 Friends

Although relatives were not usually present when an assault took place, friends often were, and seemed to react in two distinct ways. In eight cases, relationships with friends seemed to benefit from the assault, which often enhanced cameraderie between males:

> "Oh, they wanted, you know, revenge, sort of me friends ... especially in the early stages, they were all coming round. I think I gained more friends, you know, rather than lost any."

> "All my friends came over and called in and took me out down the pub [from Bristol to Portishead]."

This reaction seemed particularly marked if friends had given practical help after the assault:

> "He took me [elderly male robbery victim] down to his flat when I came out of BRI, see. I slept down there the night. He reckoned it would be safer - better than being on my own."

> "He said 'Wait there'. No, he said 'sit against the wall and I'll go back into the pub and ask for a cloth or something', like."

Support of female victims by girlfriends also seemed highly valued:

> "It's just made us closer ... just friends ... she's more understanding, and she's really protective over me."

In contrast, five victims reported much more negative reactions, and in two cases the victim blamed a 'friend' for the assault:

> "My one friend, he started the trouble, I think, he must have said something because he's a bit of loud-mouth, you know, and he always seems to start trouble, but he doesn't seem to get involved with it - he starts it and fucks off."

> "Yes, she's against me and all ... the woman next-door opened the blooming door to let the blokes in [assailants]. She's my nextdoor-neighbour."

Other negative reactions included sarcasm:

> "I got the mickey taken out of me, you know",

unwanted curiosity:

> "There's a lot of nosey people in this place [hostel for single men]",

and threats of future violence:

> "If you're getting on someone's nerves at school they always say 'Oh, I'll get so-and-so onto you again and he'll do the same again'."

The victim who suffered most emotional upset reported deterioration in his relationship with the friend who was with him when he was assaulted, though he attributed this to his own attitudes:

> "Well, the kiddy I was with, and the relationship with him has changed drastically, I feel that he could have helped me out a bit more, but that's silly talk 'cos there was a lot more of them [assailants]. Perhaps that's just my mixed-up feeling, but that's how I think about it ... "

11.5.6 Workmates

Sarcastic comments from workmates often seemed an expression of the cameraderie between males, noted above:

> "You just get the piss took out of you at work, like it's a joke. It's usually the older blokes that starts it because they was like it when they was younger."

> "Just the general mickey-taking, you know?"

> "It's more the workmates. I attended the Christmas party and somebody put a request into the DJ for 'The Oldest Swinger in Town'."

Three victims also said that along with these comments were assurances from employers or supervisors that they were not going to be disciplined. Practical support was also given:

> "Yeah, the job's going alright. They've been pretty lenient to me. They've been pretty good about it."

> "My boss said I wasn't really entitled to all the sick allowance, so he was trying to wangle all that. They [bosses] were supportive and said 'Take time off ... don't worry about it'."

In the case of a battered wife, however, attitudes were very different:

> "Oh, they don't pay me when I have time off work any more because the woman in charge of Personnel says as far as she is concerned it is self-inflicted wounds."

Most victims had facial wounds that could not be hidden from workmates, and these were a source of embarrassment, particularly if no sympathy was received:

> "Everyone was interested in the gory details of exactly what happened, there's no concern shown towards you [such as] 'Are you alright?'. They just have a laugh at your expense really."

More often, though, sympathy was evident, and this was particularly marked in the case of a schoolboy and a student, who described benefits resulting from the violence:

> "A couple of teachers came to see me [in hospital]. I feel I can talk to them now and they say 'You alright Joe?', and before that they didn't because they didn't know me. The housemaster just talked to me about what happened, the same as you're doing now, and that helped me to understand."

> "They [polytechnic students] were really all concerned about it, you know. I'm not sure where they got the news from, but a stack of them came down into the hospital. That was great, and of course when I went back I had to tell everybody everything what had happened."

11.6 Effects of Treatment and Residual Symptoms

Section 11.2 gives examples of the link between emotional upset and the extent and nature of physical injuries, and questioning about residual symptoms reinforced the importance of this inter-relationship:

> "It was just the pain ... I couldn't eat that well at all ... it was annoying."

> "I gets up in the mornings and says ' Oh, my face is hurting°' and I've been everywhere. I've been to the doctor, I've been to the dentist, and what else can you do? I just literally give up."

> "I was getting a bit depressed every time I had a meal or had a drink. I couldn't go out, you know, because it kept swelling and started weeping [salivary fistula following beer glass injury]."

> "It really affected me on motorways [i.e. driving], because with your concentration obviously you could tell it more then, and you had to keep stopping because it was hurting and you did feel a bit wheezy."

> "It's still numb down here below my lip and that causes me a bit of aggravation now and again."

More than half the victims reported persisting physical problems at the time of interview, comprising unsightly or tender scars (10 victims), missing teeth (1 victim), facial numbness (4 victims), deformity (2 victims), speech impediments (1 victim) and broken dentures (1 victim). Residual paraesthesia or anaesthesia of facial skin seemed particularly distressing.

> "I seem to dribble out of the side of my mouth."

> "It just gets me down. I've been to the dentist, I go to the hygienist, she sends me back to the doctor, he sends me back to the dentist. I've just been going round like that. A continual circle of going round and back again, you know?"

Frustration at the inability of medical staff to identify problems or provide effective treatment was apparent in other victims:

> "I wasn't really sure, you know, what was wrong, you know."

> "Well me dentures ... somebody at the boozer done that. I've been up there [the dental hospital], but it's a waste of time.

Cor blimey, there's a two-year waiting list°"

"I'm under the doctor on tablets, but I felt that the tablets was making me worse."

General practitioners were criticised by two victims for being unsympathetic, or because they gave unrealistic advice, particularly concerning emotional upset:

"I don't bother [going to see her GP] to tell you the truth, to keep going, because she said to me giving me painkiller and relax, and I can't relax."

"I didn't really go to him for [emotional] help."

These attitudes towards general practitioners were not helped by the peremptory manner in which sutures were often removed:

Q: "Did he say anything to you about what had happened?"

A: "No, I just went in and said: 'I had some stitches in the other day, can you take them out?' After two weeks, I think it was. And that was it - he just snipped them out and said 'Cheerio', and that was it."

Q: "And who took the stitches out?"

A: "A woman down Montpellier. She [a receptionist] said 'What you want?' and I said 'stitches', and she said 'tell the woman in the treatment rooms'."

Two patients, however, removed their own sutures.

Another young male victim said that he was unable to pay for necessary dental treatment:

"I was going to have them done [fractured incisors crowned] but they wanted 90 quid and I thought 'no'. I would rather have gappy teeth than pay 90 quid."

The need for, and consequences of, operations to treat fractures came as a surprise to some victims, particularly as this involved a stay in hospital, and further time away from work:

"I didn't really want an operation, but I had to."

"They wouldn't give me anything [for his pain] ... I was all dry and they said I wasn't allowed anything at all [because of an impending anaesthetic]."

"I was three or four weeks off work, because it was New Year's Eve that I had the nose broken again to set it correctly."

Surprisingly, patients whose jaws were wired together seemed to take this temporary handicap in good heart:

> "I ate all the time with a plastic icing syringe. I used to fill it up with soup and the force it against the gap in my teeth ... it wasn't too great .. Christmas and New Year - best time°"

> "I could hardly speak. I had to have sort of soup and that ... I felt a bit odd-looking."

Interestingly, two patients who were particularly depressed and anxious had been investigated for other causes of these symptoms:

> "I've been to the doctor, and they thought it was hepatitis or yellow jaundice, but he gave me a low fat diet sheet and we took it from there. No, I didn't have jaundice."

> "I hadn't been out for months ... Dr. Glover thought I had glandular fever ... he gave me some uppers because I was feeling so tired, no energy at all, physically wrecked."

11.7 Effects of Assault on Appearance

Thirteen patients said that they had been worried in the first few weeks after trauma that their facial injuries would result in permanent disfigurement. In some victims these worries had proved justified:

> "Well, at the time I thought I would be ['marked for life']."

> "I imagine my face ending up with a great big line down there like, but so far, no."

> "I suppose it does [bother me] a little bit ... it depends what kind of mood I'm in. I went [on holiday] to Greece this year, and getting tanned, the scars on my face went quite red, like, you know, it stuck out a real lot then, and quite a lot of people went up and said: 'Oh, what happened to you?'"

> "Yes, [it worried me] ever such a lot, because I didn't want a deformed face or anything. I mean, would you? I just found that when I went down the street people just stared at me and I just felt like the 'Elephant Man', so I stayed in most of the time."

> "I thought my nose was going to spoil, you know?"

> "I thought it might have deformed me in some way."

Q: *"Did you think you might be deformed for life, by this attack?"*

A: "Yes, I guess I did, especially when you're wondering when they set the nose whether or not it's going to be straight."

"I was worried the swelling wouldn't go down."

Dental injuries:

"I was probably more worried about the chipped tooth than anything else",

and removal of hair (necessary for the elevation of fractured zygomatic bones):

"They kept laughing 'cos I had a shave there as well like ... I was going to have the other side done",

also caused embarrassment and at least temporary disfigurement. One victim, who had worked as a professional model and had been assaulted by her boyfriend, was most upset about her appearance in the early post-trauma period:

"I stayed in for most of the time ... except when it was dark. I didn't go into pubs or anything like that. I just stayed in and watched telly. The swelling lasted about a week and a half."

In contrast, a few men appeared to be unaffected by the appearance of facial injuries, including one victim who had sustained many previous blows to the face:

"I'm not bothered. It [his nose] got broken loads of times when I was boxing."

"I've never considered myself that particularly good-looking anyway, so it didn't really worry me that much."

11.8 Previous Assault

All victims reported some previous physical violence, though this comprised 'justifiable' blows from parents following childhood misbehaviour in only four victims:

"He [father] used to smack our legs and stuff like that ... it was always in a good cause, yeah ... I really respect my dad."

"No, just my dad if you were naughty, then he used to get a belt, and hit us across the leg with it, but that's just discipline, isn't it?"

"When I was naughty, yes, I used to get slapped on the hand."

Sometimes a victim did not seem sure whether childhood punishment was over-harsh or represented abuse:

"My dad hit me when I was at school, he was pretty strict with us. It's upbringing, isn't it? I don't think it does you a lot of harm."

"I was always getting my bottom smacked ... everybody's always hit me. My father wasn't drunk or anything else." [battered wife]

Five others recalled obvious physical abuse as a child:

"They used to chuck me out of the house."

"My mother, she used to beat me."

"My step-dad used to hit me ... I'd do a little thing wrong, he'd hit me and then resent me ... I got a black eye once."

"Me dad gave me 'a good tankin' loads of times."

"Yes, me old man did, yes ... everything I think, coffee tables, broom handles ..."

A quarter of victims (all male) reported violence at school, usually while juniors:

"I only had one fight at school and that was in the juniors."

"That boy who beat me up. I have been in two other fights with him - that was in the juniors."

"I used to have more fights when I was in the juniors."

"Well, I got into fights ... just ordinary kiddies' fights and that was it."

"Just playground punch-ups and things like that."

One victim of a knife attack from a jealous girlfriend said that he had been involved in fights with teachers at school in the West Indies.

Apart from these incidents, most victims reported only one or two previous assaults or fights:

> "Only once before, that was down the Studio [a club] as well ... I was getting off with someone's girlfriend."
>
> "I was with my friend in the chip shop and a bloke thought he knew us and came and had a go at us - just sitting outside the chip shop."
>
> "I was walking in Lewis' [a shop] one day and a bloke just caught hold of my arm and he just hit me. Put my leg on the stairs and jumped on my leg."
>
> "I got hit once when I was young, with a bottle, apart from that I've steered well clear of trouble." [The male football fan who was most emotionally disturbed]

One victim, a sales manager assaulted during a factory outing, surprisingly said that he "would class that as the fourth fight of my life".

Five victims reported more than 10 previous assaults or fights. Two of these were bouncers, one who worked in a public house and one in a nightclub:

> "There's about one fight a week at the Rummer [a public house]. It's not difficult to deal with drunks, you just walk them out. Most start on the dance-floor - men dancing with another man's girl. The best thing is to get the first punch in as soon as they put their arms up. Down they go and you just walk them out."

Q: *"Why do fights break out at Arnos Court [a nightclub]?"*

A: "Drink, people can't handle their drink, they want to fight the nearest person to them ... Sometimes there's a lot of people. Sometimes it's one big fight."

A married woman, and also the man who had been convicted of indecent assault, had also been assaulted on numerous occasions. The only other victim who reported numerous fights as an adult recounted his experiences:

> "You are talking really about 7 years. That's about 350 weeks, ain't it? 350 weekends, right, so that's about 600 nights. And in that 600 nights I bet there hasn't been 30 fights [i.e. involving him]. I go down there every Friday and Saturday. It's because you get pissed off, I suppose."

11.9 Relationships With Assailants

At the time of interview, one third of victims still did not know who their assailants were, though two said that they remained curious about their assailant's identity:

"It would be interesting to know who it was."

"I don't know how to go about it [i.e. organising a meeting]."

Most victims did not want to meet their assailants again:

"Yes, I think I'd run away rapidly if I every spotted one."

"I certainly wouldn't want them brought back round to the door by the police. I've never seen them from that day to this, and quite frankly I hope I never do."

"No. Just not worth it, there's no point."

"He went to prison for a bit - not long enough."

One third of victims had met or seen their assailants at some time after the assault, including all but one of the women:

"It was a bit embarrassing. He had written to me a lot saying how sorry he is and would I answer back. But there is no way really."

Q: *"Has anything changed permanently as a result of this happening?"*

A: "Not really, I mean, well, we've got her now. The baby."

Q: *"Was it really fantastic when he came back [the assailant]?"*

A: "Yes".

Q: *"Is that why you got pregnant?"*

A: "Probably, yes."

"I saw him four days after ... in the street ... I was terrified. Now we say 'hello' sometimes."

Of the four males who had subsequently seen their assailants, two said that they were now friends:

"I gets on with him alright now. He said 'Everything all right?' and bought me a drink. It's a strange way, isn't it?" [that the assailant was now a friend]

"Well, he's a friend now. It was [I saw him] four days later."

One had resolved the dispute, though the assailant was not seen as a friend:

> "It was about two weeks later. He was sorry, you know. 'It wouldn't happen again'."

One of the two bouncers said that reconciliation between himself and an unruly customer sometimes took place when the customer returned to the public house a week later:

> "Sometimes they say 'I was out of order' and shake hands, but I don't say anything to them if they don't speak to me."

11.10 Initial Hospital Treatment

75% of victims criticised their reception and treatment in the Accident and Emergency Department in some way, though many appreciated that waiting for treatment was sometimes necessary because more seriously injured patients needed to be given priority:

> "I went there quarter-to-twelve [midnight] and had to wait until quarter-to-three. I was in a lot of pain, like, so they put in a room and I just lay down. There were loads of people there."

> *Q: "We stitched up your lip for you?"*
>
> A: "No. That annoyed me. They did have quite a lot of staff, but there were a lot of other people in there a lot worse off than me ... but I was pretty annoyed after because I was sitting there and nothing done."

> "What worries me about hospitals is they phoned [my mother] and said, all they said was that I was in intensive care at BRI and that was all, and of course they [the family] made such a meal of that in their minds, they imagine you ..."

> "I think it could have been done a bit quicker ... I think I felt deep down the nurses think: 'Hello, trouble-makers again', and they've got no sympathy. I can see their point of view because, you know, they put up with a hell of a lot up there."

"I don't suppose they've got time for sympathy, they didn't feel sorry for you. I suppose they're like a machine, aren't they?"

"I was left for a couple of minutes in the X-ray room and I ... was sick. It would have been nice to have somebody there keeping an eye on me."

"They [doctors and nurses] never said anything to me [a battered wife] ... so I never said anything to them." [i.e. no one asked her about the circumstances of the assault]

"I waited four hours just to get a couple of stitches."

"That's an incredible wait ... but obviously they look at the more serious cases [first]."

Some victims acknowledged that abuse and even violence from intoxicated, angry patients, including themselves, made the work of the Accident and Emergency Department staff difficult:

"It was hard for them because they've got a job to do and all these lads coming in with beer in them and swearing at them ... they're under a lot of pressure. I got a couple of nurses shout at me ... but you're bound to get that if you've got drink in you ..."

"There was youngsters in Casualty ... swearing at the nurses: 'I wanna a fuckin' cigarette!'."

Despite the criticisms above, nearly all victims seemed pleased with the treatment they received:

"... the treatment ... I couldn't fault it."

"Whatever was done was obviously a proper job."

"It was OK."

"Yes, I thought it was alright."

"No problems at all."

"Everybody was friendly and fine."

Overall, there did seem to be more dissatisfaction with the way medical and nursing staff dealt with emotional reactions to assault. There seemed to be no time to tell staff about what had happened. One victim even said that the policeman who interviewed him in the Accident and Emergency Department was more sympathetic than the medical

staff:

> "They were good about it, the policeman ... he was going through the compensation side of it and everything ... but by the nurses ... no, I don't think it was mentioned ... they're like a machine, aren't they?"

Only a few victims found the staff sympathetic and interested in them:

> "The doctor, he came and told me precisely what he was going to do, which I thought was good news."

> "They were understanding about what happened to me, you know."

Two victims commented that medical staff seemed to assume that they were largely responsible for their own injuries:

> *Q: "You think they [doctors and nurses] assume that people [i.e. victims] are guilty?"*
>
> A: "Yes, I think so, yes, definitely."

> "One of the doctors or nurses said to me: 'Was you in a punch-up?' and I said 'No'. I said 'I came out of the pub and somebody hit me'." [i.e. the member of staff expected that the victim was at least partly responsible for his injuries]

One victim, a bouncer, was assaulted in the hospital waiting room by the same young men he had been trying to eject from a public house when he sustained his original injury:

> "They give me a good tankin'."

Surprisingly, he did not blame the hospital for this assault, but considered that non-uniformed police should always be present in the Department to prevent violence.

11.11 Incidental Findings

A number of additional aspects of assault came to light during the interviews. These are considered below.

One recurring theme was police involvement. One victim said that he had not reported his assault to the police because there was

no prospect of apprehending the assailant:

> "There wouldn't be no point, I didn't have no car number, I didn't have a clue who they were ... wouldn't recognise them again",

and two more said that though the police had promised to contact them after they had reported an assault, nothing had been heard:

> "He said: 'I'll give you your compensation', like, and 'we'll contact you',like, but they never contacted me, so I don't know what happened."

> "They said they were going to see about it, but we never heard anything after."

Others described prompt police action:

> "I went up to the hospital, it was with the police." [i.e. they took the victim there]

> "I had to go straight to Bridewell [police station] to have a lot of photographs taken."

Two victims described police behaviour which they considered to be inappropriate, insensitive or brutal:

> "We were arguing like ... I didn't want to get arrested ... and he said 'You're nicked', and I said 'I ain't nicked'. He was getting heavy-handed ... he was hitting me, mind ... kicking me. He should have listened to what we were trying to tell him."

> "A copper had me in the van ... and he was hitting me with a stick, punching me."

> "I have seen them let a dog off on a kiddie when he didn't do 'owt."

> "They put ... his [a friend of the victim] hand in through the window [of the police van] where the dog is. They said [to him] 'Are you going to tell us what you have been doing?' - holding his hand in there."

> "I had a broken nose from the police."

> "They left my little girl running up and down the landing [outside a Council flat] and that really hurt me, you know." [Victim describing past arrest]

More often, however, victims described a rapid and helpful police response:

> "They are so quick on the scene nowadays."

"I felt safer" [being at the police station after the assault]

"The policeman said 'You must be pretty strong'." [to an injured victim]

A second theme to emerge was the enjoyment of violence by some (all male) victims:

"If you've had a fight and you win, afterwards, the adrenalin gets going."

"I still do now." [fancy a fight]

"You just get a big buzz off it, I suppose."

"He's one of those kiddies who likes fighting, like."

The thrill of actually fighting sometimes similar to that experienced whilst watching some television programmes (usually as young teenagers):

"Bruce Lee [kung-fu] films, 'The Warriors' and all that sort of thing."

One 13-year-old schoolboy thought that his violent provocative behaviour was a result of impersonating football of television heroes:

Q: "Is there a character you try to be like?"

A: "Yeah, Steve Neville [Bristol City Football Club centre forward], Rocky Marciano, Rocky III. Yes ... 'The Warriors' and 'The Wanderers' [US gang films]."

This victim's parents confirmed their son's attempts to imitate these heroes:

"Yeah ... he goes round impersonating them round the house, the way he grunts and groans."

Boredom in some outlying residential areas was often cited as the reason for seeking the excitement of inner city confrontations:

"No, it's quiet [Stockwood] ... it's crap really ... nothing to do."

Another 17-year-old victim said that he spent more evenings in Central Bristol since his parents' separation 13 years previously. He felt rejected at home:

"It makes me feel angry ... a bit rejected, I suppose."

Another victim associated the start of violent behaviour with his parents' divorce:

"It all started when me parents split up."

An explanation for victimisation given by three victims was that they stood out in a crowd, or appeared particularly vulnerable:

> "I used to carry a fiddle [i.e. violin] loose [when he was playing in pubs]. It's something that stands out."
>
> "Because I'm just small ... for my age ... it's always quite big lads always have a go at you."
>
> "Throwing stones at old-age-pensioners, drunks."

Exaggerated responses to provocation by bouncers was also cited as the reason for victimisation:

> "Well, we've gone to nightclubs and they [bouncers] may say: 'you can't come in' and the next thing, one of the lads is trying [to gain entry] and this bouncer's putting a punch straight into the throat for no reason at all."
>
> "The bouncer hit me ... but for popping a balloon."

Alcohol was implicated as the reason for past and present violence by many:

"If they've had a few jars of ale they'll take the world on", though drugs were not considered to be contributory, and only one victim could remember an incident where drugs (hallucinogens) had caused violent behaviour:

> "He had acid ... he was tearing his clothes off .. he was punching the ambulance blokes and punching the Old Bill [policemen]."

One bouncer, as well as blaming alcohol for violent behaviour, also thought that a preponderance of males was a contributory factor:

> "Too many men together, and no women, and there's trouble."

Misconceptions about alcohol included:

> "If you're drunk your injuries don't seem to be as much as what you be if you were sober."

"I was a bit tipsy 'cos I didn't have no drinks that week."

Two victims commented on the apparent relaxation of previously-observed 'rules' governing violent behaviour:

> "It was Christmas Eve ... you don't expect that to happen really, not then."

> "The weapon thing has only come in recently, like the beer glass ... it seems that the first they grab now is a beer glass."

> "There's knives, there's bottles ... they don't fight like we used to fight."

Surprisingly, both battered wives seemed to have recovered completely, to the extent that one could not even recall her injuries, or the event, until prompted:

> "I thought [when you asked me] 'Well, I haven't had no injuries. What injuries is that?' I couldn't remember."

11.12 Discussion

The Assault

The principal problem with this part of the semi-structured interview was that many details of the assaults were not clear, particularly as it was not possible to interview witnesses or assailants. For example, the role of the victims' friends in the assault, and the precise sequence of events, was not always obvious - sometimes due to intoxication or unconsciousness. Nevertheless, factors common to several interviews did emerge.

The bewilderment and helplessness of victims in many assaults suggests an inability to take any avoiding action, and also that, even if the victim provoked the assault, once violence commenced the victim often felt powerless to resist. This may explain the guilt reported by many victims in previous investigations [Shapland et al, 1985]; in retrospect, victims felt that they should have been able to resist the

attack. At a deeper level, the descriptions of many assaults suggest that victims found it difficult to understand how an argument could ever develop into physical assault. Victims seemed to feel numb or shocked, not just as a result of being hit, but also because the violence was so unexpected and was perceived to be unjustified. Some victims also seemed to be surprised by the immediate physical effects of violence. For example, they usually felt no pain initially, and described bleeding as if they could not accept that it represented an injury. Four victims mentioned blood spoiling their clothes before mentioning their own injuries, even in an interview which took place 6 months after the assault. These reactions may represent the 'denial' phase of the reaction to violence, described by Hamilton [1987]. Subsequently, some victims also found the need for hospital treatment hard to accept.

Interestingly, the few victims who reported that they had been intoxicated at the time of their assault did not seem to feel that alcohol had been a direct cause of violence, and even felt that assailants should have made allowances for their intoxication and should not have hit them as hard, or as often, as they had done. These comments are consistent with the findings of Chapter 9, where victims' alcohol intake was related to the severity of their injuries: intoxicated victims were more likely to sustain severe and multiple injuries.

The Emotional Response to Assault

Bewilderment and anger seem to be natural responses to the unexpected events detailed above: victims often did not understand why someone (often unknown to them) had set out to hit them, why they had allowed themselves to be hit, how they could have been injured, and why they needed to go to hospital. For some victims there were addi-

tional, more specific, reasons to feel bewildered. For example, one victim could not understand how it was that he had been 'assaulted' by a policeman, and another why he had been blamed for the assault.

The results of this study tend to support the hypothesis that victims of assault experience a loss of self-respect, in that their preconceptions of the likely behaviour of others, and of themselves, in an assault often proved to be wrong. This feeling of loss seemed to be most pronounced in victims who had little or no prior experience of violence, and least pronounced where violence was a frequent occurrence; for example, in 'battered' wives, and in young men who had been involved in numerous fights. The typical 'symptoms' of loss were evident both in the semi-structured interviews and in the psychiatric assessment described in Chapter 10. Inability to make sense of things, and anger [Marris, 1974], were evident in several interviews, as were anxiety and depression [Fried, 1963; Marris, 1974; Shapland et al, 1985]. Clearly, loss is an important feature in burglary, which was reported by only 2 victims, though in both cases the psychological impact of physical violence seemed to be more pronounced than that of loss of possessions.

In this study, many victims experienced loss of function and their appearance was almost always altered, if only temporarily, as a result of injury. No quantitation of anger and anxiety was attempted in the semi-structured interview, but psychological reactions seemed to be closely related to the persistence of physical symptoms, suggesting in many cases that these were the most important reminders of loss. Further, and perhaps more importantly, continued pain and deformity were, in themselves, important causes of emotional distress.

These physical reminders have few, if any, parallels in previous research into 'loss and change'. After bereavement, for example,

there are usually no physical reminders of the illness or accident which resulted in the loss and, following slum resettlement, there are no physical reminders of the process of resettlement, unless this involved force and physical injury. Most victims in this study hardly referred to their lives before the assault, a common preoccupation in most accounts of the effects of loss, (though there was no direct questioning concerning this, and victims probably took their physical well-being before the assault for granted). In this respect, the loss of self-respect experience by the victims in this study was not consistent with previous accounts [Marris, 1974]. Interestingly, those who lost consciousness were the exceptions, in that they frequently thought about the period of time which had been 'lost'.

Ambivalent attitudes and behaviours (important signs of loss) were sometimes evident, however, particularly initially: a few victims were extremely reluctant to admit that they had been injured, yet submitted themselves to hospital treatment. This dismissal of relatively severe injuries, which necessitated surgical operations, as "inconvenient" or "just another night out" seemed a particularly ambivalent response. Interestingly, all the victims who spoke in these terms were young men, who had perhaps lost most in terms of their 'macho' self-images.

The hypothesis that anxiety following assault is due solely to the metabolic response to trauma is not supported by the evidence of this study: many victims remained anxious long after wounds had healed, and significantly different levels of anxiety were recorded in different groups of victims with the same injuries (Chapter 10). Clearly, though, these results do not rule out the possibility that endogenous catecholamines, for example, caused anxiety and nausea soon after injury, and this seems to be a particularly likely explanation

for initial symptoms where pain and discomfort were experienced by a frightened victim on his way to hospital (flight) after an assault or fight.

The relationship between the psychological and physical effects of assault was exemplified by the resolution of emotional upset once physical symptoms (for example, facial oedema and haematomas) had disappeared. In 40% of victims, emotional upset had largely resolved after 2 weeks. However, there were obvious exceptions to this, particularly as almost half the assault victims described in Chapter 10 showed evidence of psychiatric abnormality at 3 months, and one quarter of patients were emotionally upset at the time of the semi-structured interview (6 months). Information derived from the interviews suggests that persistence of this upset was related to the speed of resolution of the 'grief' which typically follows any kind of loss [Gorer, 1965]. The interviews suggested a number of factors which tended either to shorten or prolong this process:

1. <u>The persistence of physical symptoms</u>

As discussed above, emotional and physical recovery seemed to be closely linked. Sometimes symptoms did not have to be severe to be powerful reminders of the assault. In one victim, for example, an ever-present numbness in his lip constantly took his mind back to his mugging by football supporters.

2. <u>The level of support from family, friends and acquaintances</u>

Support received from the victim's partner seemed most valued and helpful, though of course many victims were unmarried. Recovery seemed to be particularly rapid when the assault resulted in an improvement in a relationship. Some victims clearly valued their partner more highly as a result of finding that "she was more worried that what I was", and the victim was often valued more highly because

of the effect of obvious bruising and lacerations. Interestingly, few relationships came to an end as a result of physical injuries, though one victim said that his girlfriend had left him as a result of his becoming anxious and depressed. The exceptions to this were the victims of violence from partners; two boyfriend-girlfriend relationships terminated as a result of this. For one 'battered' cohabitant, however, the assault had been almost completely erased from her mind because she had become pregnant in the subsequent reconciliation and, at the time of interview, was nursing a baby whom she clearly adored.

Parents were an important source of support, and several victims quoted verbatim the first words that their parents uttered on first seeing them after the assault. Spontaneous concern seemed valued, even if it implied criticism: "My God! What the hell have you been doing?" Conversely, when parent(s) were preoccupied with some other domestic crisis, such as an impending operation, or a recent bereavement, the recovery of the victim seemed to be more protracted. Between these two extreme reactions were those of parents whose relationship had come to an end. Step-parents seemed to able to give less support, and in this series of 30 interviews only natural parents were reported as spontaneously expressing their concern. Broken parental relationships seemed to affect the victims in two ways: dislike of a step-parent increased the frequency and duration of activity outside the home (increasing the chances of victimisation), and also led to reduced support after an assault. A stable home life seemed to be important to victims who were disorientated, acting as a powerful reminder that life was progressing as it always had done, and that, in reality, much had not been lost. Because many victims in this study were single males, the support of parents and girlfriends seemed crucial, and of course the BCS demonstrated that, on a national basis,

victims of assault are most often young single males [Hough and Mayhew, 1983]. Obtaining a good family history therefore seems to be an important aspect of the initial visit to hospital.

The support of siblings, friends and workmates seemed to be less important, and the comments of these individuals were sometimes interpreted as negative, to the extent that victims seemed to find some conversations an ordeal: "They just have a laugh at your expense really". Support from girlfriends and sisters was clearly valued by female victims, however, as was support from fellow students by male victims.

An important problem with the evaluation, in this study, of the effects of support from any agency, whether from a relative or friend, the police, or the hospital, was the lack of any objective measure of upset. Of course, there would be severe methodological difficulties in a longitudinal study which attempted to relate levels of anger, depression or anxiety to events after an assault, but this seems to be the only objective way of assessing the true benefit of various kinds of support. In another area of research, however, longitudinal studies of individual patients with regard to pain perception (e.g. Seymour, et al, 1985] have provided useful data concerning not only the effects of various analgesics, but also of other factors such as visits from doctors and nurses. From this perspective, longitudinal studies of assault victims should possibly follow the same protocol.

3. Relationships with assailants

Reconciliation had helped at least 3 victims in this study, 2 of whom had been very frightened both before and during the meeting, which eventually occurred by chance. These reactions have been described previously [Shapland et al, 1985]. Only 2 victims said that they had thought about trying to meet their assailants again for the

purpose of reconciliation, but the majority expressed either disinterest in a meeting, or were positively not interested. The sample in this study was small, but this finding is at variance with previous research where about half the victims indicated enthusiasm for a meeting [Maguire and Corbett, 1987]. Victims' preconceptions about the value of a meeting may, of course, be totally false (reminiscent of the unfounded fears of the elderly concerning assault in the first place), and the results of this investigation suggest that reconciliation, and even friendship, can follow a meeting between assailant and victim.

4. The level of support from medical staff and police

Strikingly, three-quarters of the victims criticised hospital medical staff in some way, though rarely because of the quality of the treatment they received for their physical injuries. As has been described in previous research [Shapland et al, 1985], victims often had to wait some hours for treatment. The present investigation highlighted that Accident and Emergency Department and police resources were inadequate to deal with violence at peak times (see also Table 8.3(g)) though, of course, the precise time of an assault is impossible to forecast. A problem which is easier to solve, however, concerned the attitudes of medical staff. The comment: "I don't suppose they've got time for sympathy" seems to be an indictment of medical services. Most previous work in this area involves the management of victims of rape, where it has clearly been shown that consideration, support, and respect are crucial [Holmstrom and Burgess, 1978]. This is also likely to apply to other victims of assault. Clearly, though, a sympathetic approach must be tempered with recognition of the problems associated with alcohol intoxication, and staff need to be able to deal with victims who are violent [Lion et al, 1969; Gasnold,

1978]. This investigation also suggested that Accident and Emergency staff had little or no time for initiating longer-term management of the emotional sequelae of violence, though management of severe physical injuries was a priority. One practical step which could improve this situation would be to establish a liaison with local victim support schemes so that a volunteer could attend the hospital at peak periods.

Notwithstanding the above, all the victims were aware that the interviewer was a Hospital Oral Surgeon, and criticisms may have been stronger still if a neutral interviewer had carried out the investigation.

Though the semi-structured interviews were not directly concerned with police attitudes, a few victims did comment either that the police had promised to keep them in touch with future developments and had failed to do so, or that they had been helpful and supportive. One strongly held view was that policing of the Accident and Emergency Department should be improved, though this would be a threat to confidentiality concerning medical treatment. Interestingly, one victim considered that the police had been more supportive than the medical staff, emphasising again the need for training in this area.

This study has highlighted a number of factors which are important in the resolution of 'grief' following assault, but further work is necessary to identify and give priority to these and as yet undiscovered factors. In this investigation, resolution was accelerated or delayed by various agencies, none of which, on their own, was of universal help or hindrance. As with the aetiology of violence, complete recovery seems to depend on many factors. Though longer-term studies are necessary, these interviews gave the impression that support is most effective if it comes from the victim's partner and family, and

that the first priority of other agencies should be to supplement and encourage this.

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APPENDIX

I : QUESTIONNAIRE

II: DATABASE STRUCTURE

INJURY FOLLOWING ASSAULT

Questionnaire

For office use only

NAME OF INTERVIEWER _____ STUDY NUMBER _____

Date ..... Time Now .....
(24 hour clock, e.g. 00.15, 22.45 etc)

Name ..... Sex ..... ☐

Address .....

.....

Telephone number .....

Date of Birth ..... Place of Birth .....

Age when left school ..... ☐

Ethnic Group ..... ☐

Marital status ..... ☐

Date of marriage .....

Occupation ..... ☐
(state whether unemployed, at school, university, etc.)

Occupation of spouse ..... ☐

Time in present occupation ..... ☐

Paid weekly or monthly? ..... ☐

Weekly net income ..... ☐
(state amount)

Date of assault .....

Time of assault .....

Did assault occur in City Centre? Yes/No ☐

Precise place of assault .....

..... ☐

Why was patient assaulted? ..... ☐
(Try hard to get a sensible answer)

For office use only

Number of assailants ..... ☐

Age(s) of assailants ..... ☐

Ethnic group of assailants ..... ☐

Sex of assailants ..... ☐

Were police aware of assault? Yes/No ☐

Will victim inform police of assault? Yes/No ☐

Activity at time of assault ..... ☐

Number of blows sustained ..... ☐

Did victim fall over during assault? Yes/No ☐

Number of blows sustained after fall ..... ☐

Did injury requiring hospital treatment occur before or after fall?
(delete as appropriate) Yes/No ☐

Weapon used (include fists, feet, etc.) ..... ☐

Length of time assailant known to patient ..... ☐

Relationship of assailant ..... ☐
(e.g. brother, wife, friend, neighbour, employee, etc.)

Names of assailants ..... ☐

Occupation of assailants ..... ☐

Was assailant a "bouncer"? Yes/No ☐

Patient's alcohol consumption in previous 12 hours ..... ☐

Place(s) of alcohol consumption in previous 12 hours ..... ☐

Average weekly alcohol consumption ..... ☐

History of hospital treatment for injury following assault? Yes/No ☐

Number of previous fights/assaults from age 11 ..... ☐

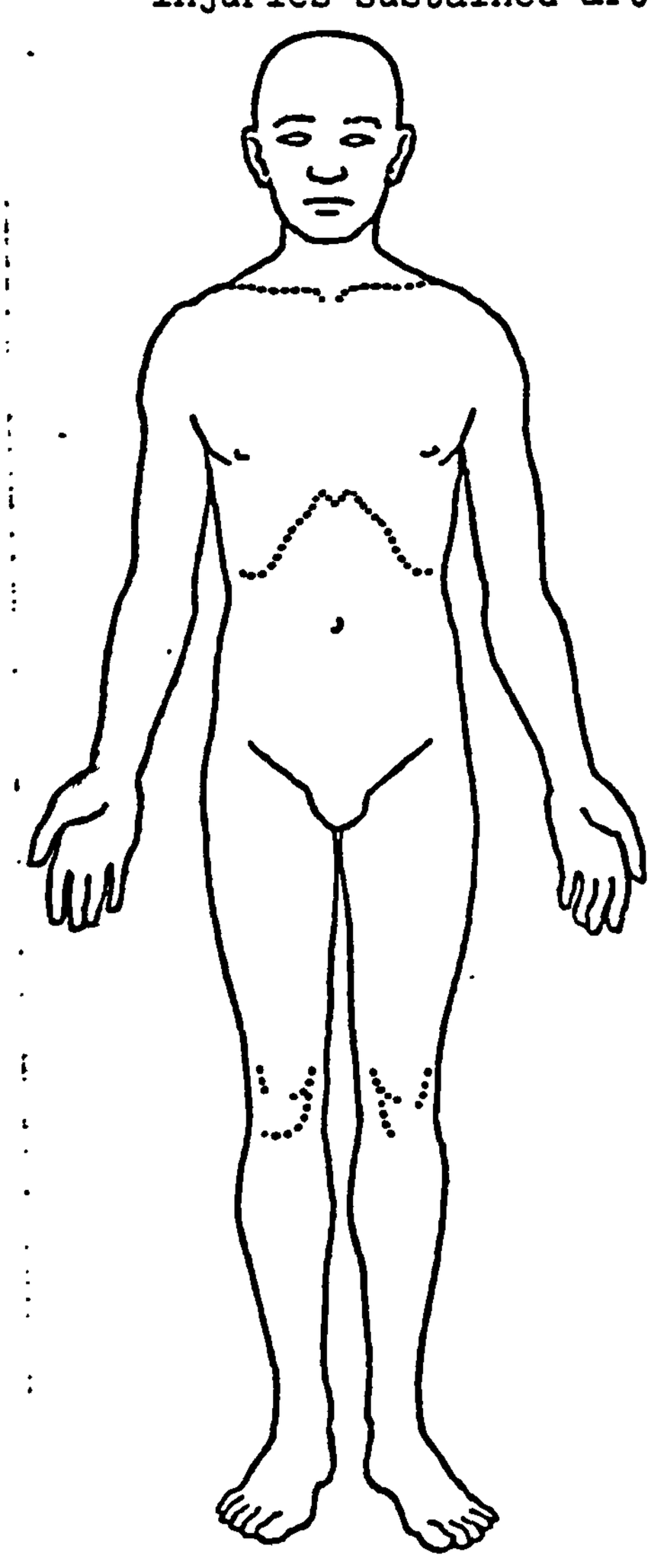
Record anything else patient tells you:

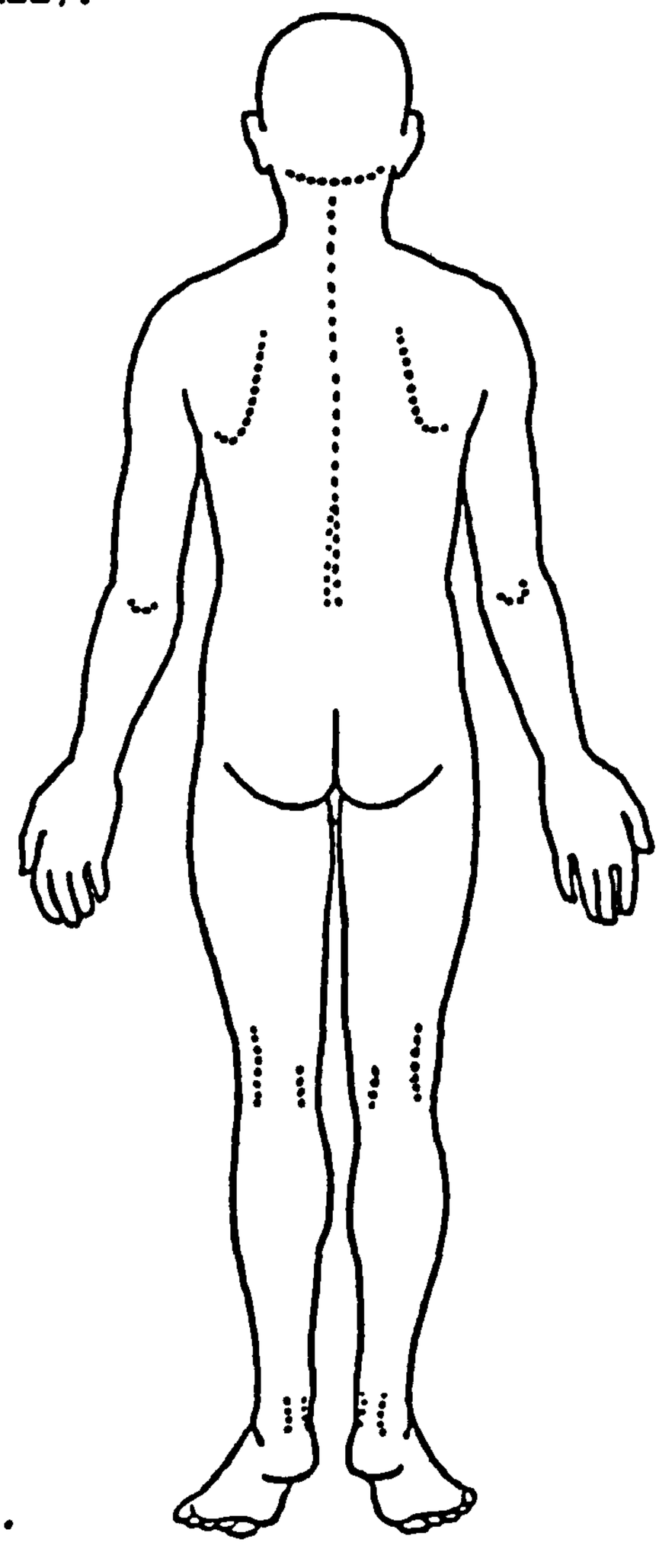
Details of previous fights/assaults
N.B. If more than 3, record details of 3 recent assaults

For office use only

	Place	Year	Cause	Injuries	Associated with Alcohol (Victim OR Assailant)	
1.					Yes/No	
2.					Yes/No	
3.					Yes/No	

Injuries sustained (chart bruises, lacerations, etc; indicate injuries sustained after fall):



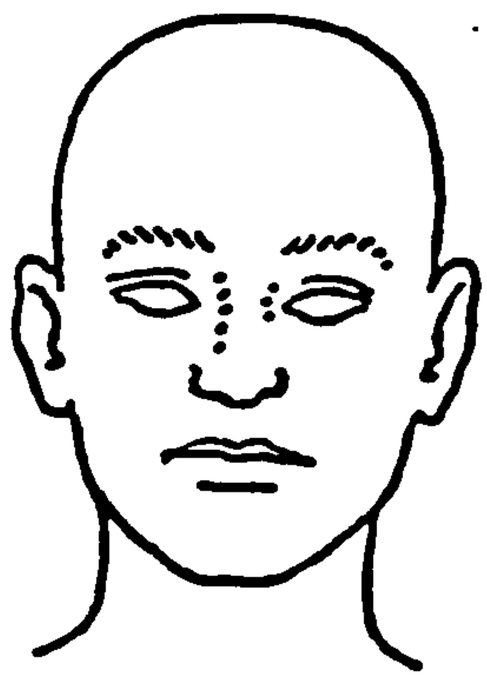


Fractures — Yes/No ☐

State exact site(s) (Left/Right etc.) ☐

Chart OLD scars on face/neck (NOT present injuries) — Yes/No ☐

SITE



CAUSE

1. ..... ☐
2. ..... ☐
3. ..... ☐

Treatment

Admitted — Yes/No ☐

Lacerations sutured — Yes/No ☐

Other treatment (record details) ..... ☐

Place of follow-up treatment ..... ☐
(B.R.I., Dental Hospital, G.P., etc.)

PLEASE TAKE BLOOD SAMPLE FOR ALCOHOL LEVELS.

THANK YOU for completing this questionnaire. Please give it to Oral Surgery Resident.

If found, please return to Mr J P Shepherd, The Dental Hospital, Bristol.

GENERAL HEALTH QUESTIONNAIRE

GHQ 28

David Goldberg

Please read this carefully.

We should like to know if you have had any medical complaints and how your health has been in general, after your fracture. Please answer ALL the questions on the following pages simply by underlining the answer which you think most nearly applies to you. Remember that we want to know about present and recent complaints, not those that you had in the past.

It is important that you try to answer ALL the questions.

Thank you very much for your co-operation.

Have you recently

A1 – been feeling perfectly well and in good health?	Better than usual	Same as usual	Worse than usual	Much worse than usual
A2 – been feeling in need of a good tonic?	Not at all	No more than usual	Rather more than usual	Much more than usual
A3 – been feeling run down and out of sorts?	Not at all	No more than usual	Rather more than usual	Much more than usual
A4 – felt that you are ill?	Not at all	No more than usual	Rather more than usual	Much more than usual
A5 – been getting any pains in your head?	Not at all	No more than usual	Rather more than usual	Much more than usual
A6 – been getting a feeling of tightness or pressure in your head?	Not at all	No more than usual	Rather more than usual	Much more than usual
A7 – been having hot or cold spells?	Not at all	No more than usual	Rather more than usual	Much more than usual

---

B1 – lost much sleep over worry?	Not at all	No more than usual	Rather more than usual	Much more than usual
B2 – had difficulty in staying asleep once you are off?	Not at all	No more than usual	Rather more than usual	Much more than usual
B3 – felt constantly under strain?	Not at all	No more than usual	Rather more than usual	Much more than usual
B4 – been getting edgy and bad-tempered?	Not at all	No more than usual	Rather more than usual	Much more than usual
B5 – been getting scared or panicky for no good reason?	Not at all	No more than usual	Rather more than usual	Much more than usual
B6 – found everything getting on top of you?	Not at all	No more than usual	Rather more than usual	Much more than usual
B7 – been feeling nervous and strung-up all the time?	Not at all	No more than usual	Rather more than usual	Much more than usual

Please turn over

C1 — **been managing to keep yourself busy and occupied?**	More so than usual	Same as usual	Rather less than usual	Much less than usual
C2 — **been taking longer over the things you do?**	Quicker than usual	Same as usual	Longer than usual	Much longer than usual
C3 — **felt on the whole you were doing things well?**	Better than usual	About the same	Less well than usual	Much less well
C4 — **been satisfied with the way you've carried out your task?**	More satisfied	About same as usual	Less satisfied than usual	Much less satisfied
C5 — **felt that you are playing a useful part in things?**	More so than usual	Same as usual	Less useful than usual	Much less useful
C6 — **felt capable of making decisions about things?**	More so than usual	Same as usual	Less so than usual	Much less capable
C7 — **been able to enjoy your normal day-to-day activities?**	More so than usual	Same as usual	Less so than usual	Much less than usual

D1 — **been thinking of yourself as a worthless person?**	Not at all	No more than usual	Rather more than usual	Much more than usual
D2 — **felt that life is entirely hopeless?**	Not at all	No more than usual	Rather more than usual	Much more than usual
D3 — **felt that life isn't worth living?**	Not at all	No more than usual	Rather more than usual	Much more than usual
D4 — **thought of the possibility that you might make away with yourself?**	Definitely not	I don't think so	Has crossed my mind	Definitely have
D5 — **found at times you couldn't do anything because your nerves were too bad?**	Not at all	No more than usual	Rather more than usual	Much more than usual
D6 — **found yourself wishing you were dead and away from it all?**	Not at all	No more than usual	Rather more than usual	Much more than usual
D7 — **found that the idea of taking your own life kept coming into your mind?**	Definitely not	I don't think so	Has crossed my mind	Definitely has

A ☐ B ☐ C ☐ D ☐ TOTAL ☐

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Code 4075 02 4

HAD Scale

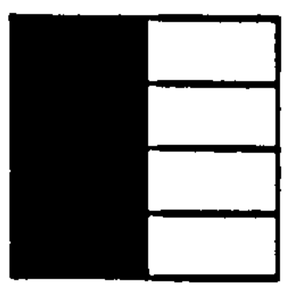
Name: **Date:**

Doctors are aware that emotions play an important part in most illnesses. If your doctor knows about these feelings he will be able to help you more.
This questionnaire is designed to help your doctor to know how you feel. Read each item and place a firm tick in the box opposite the reply which comes closest to how you have been feeling in the past week.
Don't take too long over your replies: your immediate reaction to each item will probably be more accurate than a long thought-out response.

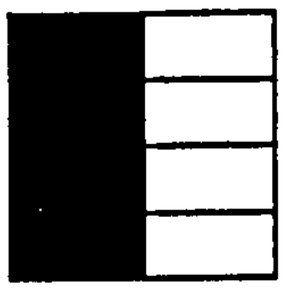
Tick only one box in each section

I feel tense or 'wound up':
- Most of the time .....
- A lot of the time .....
- Time to time, Occasionally .....
- Not at all .....

I feel as if I am slowed down:
- Nearly all the time .....
- Very often .....
- Sometimes .....
- Not at all .....

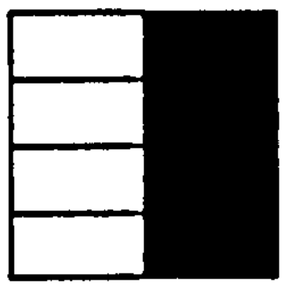


I still enjoy the things I used to enjoy:
- Definitely as much .....
- Not quite so much .....
- Only a little .....
- Hardly at all .....

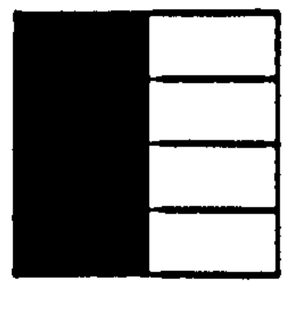


I get a sort of frightened feeling like 'butterflies' in the stomach:
- Not at all .....
- Occasionally .....
- Quite often .....
- Very often .....

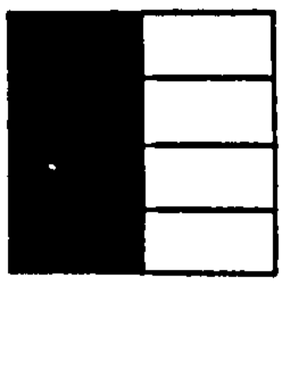
I get a sort of frightened feeling as if something awful is about to happen:
- Very definitely and quite badly .....
- Yes, but not too badly .....
- A little, but it doesn't worry me .....
- Not at all .....



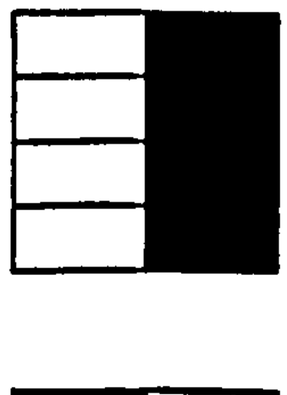
I have lost interest in my appearance:
- Definitely .....
- I don't take so much care as I should.....
- I may not take quite as much care .....
- I take just as much care as ever .....



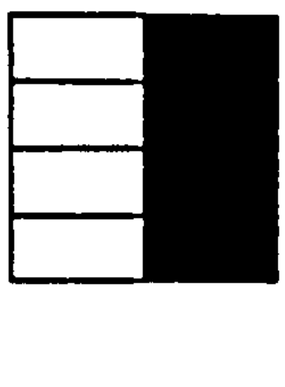
I can laugh and see the funny side of things:
- As much as I always could .....
- Not quite so much now .....
- Definitely not so much now .....
- Not at all .....



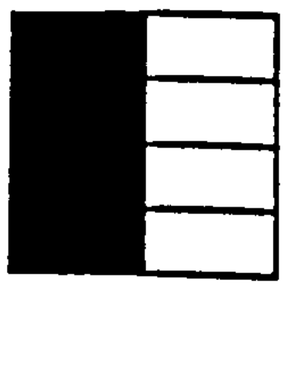
I feel restless as if I have to be on the move:
- Very much indeed .....
- Quite a lot .....
- Not very much .....
- Not at all .....



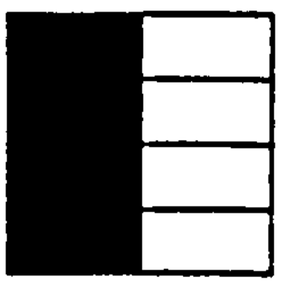
Worrying thoughts go through my mind:
- A great deal of the time .....
- A lot of the time .....
- From time to time but not too often ...
- Only occasionally .....



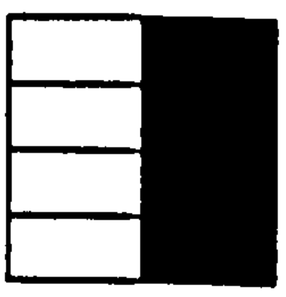
I look forward with enjoyment to things:
- As much as ever I did .....
- Rather less than I used to .....
- Definitely less than I used to .....
- Hardly at all .....



I feel cheerful:
- Not at all .....
- Not often .....
- Sometimes .....
- Most of the time .....

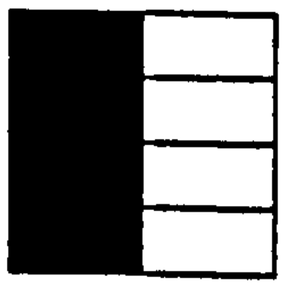


I get sudden feelings of panic:
- Very often indeed .....
- Quite often .....
- Not very often .....
- Not at all .....



I can sit at ease and feel relaxed:
- Definitely .....
- Usually .....
- Not often .....
- Not at all .....

I can enjoy a good book or radio or TV programme:
- Often .....
- Sometimes .....
- Not often .....
- Very seldom .....



Do not write below this line

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VICTIM	*						
	sno fixed bin (17)	view_date fixed bin (20)	view_time fixed bin (17)	sex char (1)	district char (15)	birth_date fixed bin (20)	birth_place char (10)

left_school fixed bin (17)	ethnic char (5)	marital char (1)	marriage_date fixed bin (20)	occupation char (8)	ec_group fixed dec (3,1)	occ_spouse char (8)	

ec_group_spouse fixed dec (3,1)	employ_time float bin (27)	paid char (1)	income fixed bin (17)	assault_date fixed bin (20)	assault_time fixed bin (17)	centre char (1)	

assault_place char (10)	assault_district char (15)	reason char (10)	no_assail fixed bin (17)	min_age fixed bin (17)	max_age fixed bin (17)	

ethnic_assail char (5)	sex_assail char (5)	police_aware char (1)	police_inform char (1)	activity char (20)	no_blows fixed bin (17)	fall char (1)	

no_blows_after fixed bin (17)	injury_before_fall char (1)	weapon char (15)	time_known float bin (27)	relation char (10)	name_assail char (1)	occ_assail char (8)	

ec_group_assail fixed dec (3,1)	bouncer char (1)	alcohol_24hr fixed bin (17)	alcohol_district char (15)	alcohol_wk fixed bin (17)	follow_treat char (1)	

no_fights fixed bin (17)	no_bruise_f fixed bin (17)	no_lac_f fixed bin (17)	no_frac_f fixed bin (17)	no_bruise_b fixed bin (17)	no_lac_b fixed bin (17)	

no_scar fixed bin (17)	admitted char (1)	suture char (1)	blood_level fixed bin (17)	teeth char (1)	GGT fixed bin (17)	comment char (10)	

WARD	*			
	district char (15)	population fixed bin (17)	m_unemp fixed bin (17)	f_unemp fixed bin (17)

BRUISE	* sno fixed bin (17)	* x1 fixed bin (17)	* y1 fixed bin (17)	x2 fixed bin (17)	y2 fixed bin (17)	x3 fixed bin (17)

	y3 fixed bin (17)	x4 fixed bin (17)	y4 fixed bin (17)

COST	* treatment char (20)	no_OP_visit fixed bin (17)	no_GP_visit fixed bin (17)	no_day_admit fixed bin (17)	no_op_hr fixed bin (17)

COURT	* sno fixed bin (17)	try_date fixed bin (20)	charge char (10)	guilty char (1)	offence char (10)

FRACTURE	* sno fixed bin (17)	* f_no fixed bin (17)	side char (1)	bone char (15)

INJURY	* sno fixed bin (17)	* type char (1)	* f_no fixed bin (17)	side char (1)	site char (6)

LACERATION	* sno fixed bin (17)	* x1 fixed bin (17)	* y1 fixed bin (17)	* x2 fixed bin (17)	* y2 fixed bin (17)

OTHER_TREATMENT	* sno fixed bin (17)	* treatment char (20)	hospital char (10)